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The consensus judgment process in job evaluation: The effect of sex of chairperson, job stereotype, and job level on individual and group ratings

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THE CONSENSUS JUDGMENT PROCESS IN JOB EVALUATION: THE EFFECT OF SEX OF CHAIRPERSON, JOB STEREOTYPE, AND JOB LEVEL ON INDIVIDUAL AND GROUP RATINGS

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ABSTRACT

Research concerning the role of the consensus judgment process in job evaluation has been minimal. In the present study, 80 male and 80 female college students rated jobs individually using a point method of job evaluation. The subjects were then divided into groups of 4 and a chairperson was assigned. The effects of sex of rater, sex of chairperson, and job stereotype were assessed. The use of an averaging rule to predict consensus ratings, as well as the amount of disagreement among dimensions, were also explored. A third area of research concerned the leadership and power exhibited by the chairperson. Results indicated that both job point level and job stereotype significantly affected ratings. The use of an averaging rule predicted consensus ratings accurately. The need for replication in field settings is discussed.

Chapter I

INTRODUCTION

Background

Job evaluation methods are designed to rank or classify jobs in order to determine their relative value to the organization. The value is reflected in the rate of pay assigned to each job. One of the most widely used approaches to job evaluation is the point method (Akalin, 1970; British Institute of Management, 1961; Cascio, 1978; Lanham, 1953a, 1953b; McCormick, 1979; Spreigel & Lanham, 1951). This method breaks the job into several factors and assigns separate point values to each one. The point values of the factors are summed using one of two techniques to arrive at a total point score for the job being evaluated (Hay, 1950). One technique involves forming a committee to discuss and debate these ratings of factors resulting in a consensus rating. A second technique averages the ratings from the individual evaluators to obtain a total score of job worth. It is suggested in this thesis that certain factors may not require consensus discussion since evaluators agree as to which factors are important. Furthermore, it will be argued that the group consensus rating may be predicted from the average of ratings and from the prediscussion rating patterns of the individual evaluators.

A second objective will be to identify factors which affect consensus ratings such as sex, power, and leadership. Each of these areas will be briefly discussed below. Blumrosen (1979) and Treiman (1979) have suggested that job evaluators may use sex stereotypes in evaluating jobs. It has also been suggested that since the job evaluation committees are made up of almost exclusively male evaluators, female jobs may receive lower ratings than male jobs (Trieman & Hartmann, 1981). Therefore, sex bias may exist due to the stereotypic nature of the job, due to the sex of the evaluators, or due to the sex of the chairperson. By observing the rating methods utilized by the committee evaluators, as well as the effect of job stereotype on dimension ratings, the outcomes of sex bias will be assessed. The power and leadership variables will be examined correlationally. These variables are simply exploratory and have been included because of their possible relationship to consensus ratings. Power is a variable which may bias consensus ratings. Research has indicated committees composed of upper- and lower-level management change ratings more frequently (Sackett & Wilson, 1982). Therefore, the ratings may be biased if individual evaluators perceive discrepancies in power. A measure of each chairperson's power will be obtained through looking at the social power attributed to these individuals by the other members of the committee. The chairperson will also rate his/her own perceived power on an adapted form of the same power measure.

A third factor to be explored is bias due to the differential leadership ability of the chairperson. If one evaluator is designated

as the chairperson, he/she may exert more influence on the consensus rating as a function of adopting this role. Through assigning a chairperson position in each committee, the influence of this factor will be explored.

The following sections will discuss job evaluation, including a brief introduction and discussion of the methods most commonly employed. Special attention will be directed toward the point method and its biases, since this will be the focus in the present study. A discussion of consensus ratings as well as a detailed explanation of the hypotheses, general design, tasks, and measures follows.

Job Evaluation

Introduction

Job evaluation is a technique for hierarchically ordering a group of jobs according to their value or worth. The procedure provides a basis for pay rates. Job evaluation was first used by the U.S. Civil Service Commission in 1871 (Patton, Littlefield, & Self, 1964) and in 1881 by Frederick W. Taylor (Pasquale, 1969). During the 1940s, job evaluation was widely employed in the private sector as well as by the government. A well known example is the General Schedule (GS) Classification System used by the U.S. Civil Service Commission (Suskin, 1977). At present, job evaluation techniques are popular in all types of organizations, although the exact number of workers affected by these plans is not known (Treiman, 1979).

The job evaluation process typically follows a certain methodology. First, a job analysis is conducted so that exact

descriptions and specifications can be outlined for each job (Jeanneret, 1980). Then, either the job analysts or a job evaluation committee ranks the job descriptions and specifications using some type of job evaluation method (Lanham, 1955). The wage and salary rates are set according to the results of the job evaluation. Several types of job evaluation methods have been developed and will be discussed in the following section.

Job Evaluation Methods

Bass and Barrett (1981) list four traditional methods of job evaluation. These are: ranking, classification, factor comparison, and the point method. A description and critique of each method will be provided below.

Ranking. In the ranking method, jobs are ranked, through comparison to each other, on the basis of their overall job worth (McCormick & Tiffin, 1974; Smyth, 1950). Assessments are based on the whole job although raters may base their judgments on considerations of skill, effort, working conditions, and responsibility.

The ranking method is simple and easily applied to smaller organizations with few jobs to be evaluated (McCormick, 1979). Problems arise when there are many jobs to be evaluated and raters unfamiliar with the jobs must be used. Lanham (1955) also states that ranking methods may use arbitrary judgments and lack sufficient documentation of the reasons for judgments.

Classification method. The classification method establishes a hierarchy of grades or categories. These are chosen depending on the degree of skill, effort, and responsibility required for the job. The

jobs to be evaluated are then fit into the grades which match closest in overall description (Collett, 1977). A typical example used for this method is the Civil Service System of the federal government (Epperson, 1975; Treiman, 1979).

The classification method is simple to develop and use. If the method is used to evaluate jobs with established pay rates, however, discriminatory pay practices, if they exist, may be perpetuated. This occurs because the inequalities in existing rates of pay are still used to evaluate the jobs (McCormick, 1979). Jobs which cannot be classified into the predetermined categories must be assigned arbitrarily (Treiman, 1979). This makes the systematic classification of jobs into grades difficult.

Factor comparison. Benge, Burke, and Hay (1941) provide a detailed discussion of the factor comparison method of job evaluation. First, a number of characteristics are chosen by which the worth of the job will be determined. The number of factors usually range from 4 to 7 (Livy, 1975). For example, the Benge, Burke, and Hay factor comparison instrument uses the following scales: mental requirements, skill requirements, physical requirements, responsibility, and working conditions. Each job is ranked on all of the factors. Key jobs are chosen which are considered to be paid fairly and well established over time. Next, the salaries for the key jobs being evaluated are divided into dollar amounts to be paid for each of the individual factors. The original ranking of the jobs on the factors is compared to the second ranking which is derived from the dollar values allotted to the individual factors. Any jobs that differ on these two rankings

are eliminated so that a final list of key jobs is developed. The pay rates for all other jobs are then calculated by comparing the factors of the job to be evaluated with the factors of the key jobs. The dollar amounts to be paid for each of the individual factors are added together to arrive at the total pay for the job being evaluated.

The factor comparison method is not the most widely used job evaluation technique (Akalin, 1970). The method is considered to be complex and somewhat subjective (Treiman, 1979). Employees also tend to dislike the method because it is difficult to understand (Livy, 1975; Otis & Leukart, 1954).

Point method. The point method is the most popular method of job evaluation (Akalin, 1970; British Institute of Management, 1961; Cascio, 1978; Lanham, 1953a, 1953b; McCormick, 1979; Spreigel & Lanham, 1951). For example, during 1977, factor evaluation was put into effect by the federal government. The system is used today to classify non-supervisory jobs of the General Schedule (Craver, 1977). The past popularity of the point method was demonstrated by the National Electrical Manufacturers Association (NEMA). A uniform point method plan was utilized in the member companies for the hourly-rated shop jobs. Later, this plan was extended to include technical, clerical, supervisory, accounting, and general salary jobs (Cascio, 1978). The point method is regarded as the most common job evaluation technique because of its ease of administration and wide range of applicability. The method is being implemented more frequently in the private sector as well as in many government agencies (Craver, 1977).

The idea behind the point method is simple: Jobs can be broken down and rated based on several common evaluation factors. These factors usually consist of four major ones--skill, effort, responsibility, and working conditions. Each of these major factors are divided into subfactors. The subfactors are then further subdivided into distinct degrees or levels. A degree for physical effort could be "requires lifting weights in excess of 50 lbs." A second degree for physical effort could be "requires lifting weights from 1-5 lbs." The levels or degrees are given point values. The sum of the points for the separate subfactors yields the total point score or worth for the job being evaluated. Finally, the subfactors are arranged into pay ranges which reflect existing company pay grades as well as pay patterns in the labor market (Sibson, 1967).

The job worth or total point score depends on the point values assigned to the different subfactors. Two methods are used to weight these subfactors. One method uses multiple regression to demonstrate the degree to which the subfactors predict the current pay grades established in industry (Zollitsch & Langsner, 1970; Robinson et al., 1974). The second method used to assign weights to the subfactors is based on the judgment of a group of individual evaluators. In job evaluation, these individuals are called a job evaluation committee.

The job evaluation committee is an important component of most job evaluation procedures. This committee consists of a group of individuals with differing organizational, technical, and social backgrounds. Each committee is directed by a chairperson. This person has a dual role as evaluator as well as director of committee

meetings. The subjective judgments of factor ratings and weight assignments are made through discussion and debate among all of the evaluators (Henderson, 1982).

A training program should be provided for all committee members. This program would provide for the development of committee members' judgments so that they may accurately assess job importance, difficulty, and minimum performance qualifications. A training manual is most commonly used to assist committee members in developing these skills. Two general learning objectives should be emphasized throughout the manual: (1) the ability to look for key factors when evaluating a job description; and (2) a basic understanding of the job evaluation technique being used in order to form a consensus agreement as to the job's relative value.

In terms of function, a job evaluation committee may be utilized in three different ways; for selecting the overall job evaluation method, for designating key jobs, and for identifying job worth (Hay, 1950). The committee is rarely involved in selecting a job evaluation method. The staff of the personnel department usually reviews the advantages and disadvantages of the different job evaluation techniques and then may ask for a final opinion from the committee. Most of the background work for identifying key jobs is also accomplished by the personnel department. The potential key jobs requiring committee discussion are, therefore, presented. The most important task for the committee is determining job worth. These decisions directly affect salary and wage rates. A consensus rating is achieved in a two-step process. First, each evaluator rates the

jobs independently, and then a final consensus is reached through discussion and debate concerning the job content and the linking of the job requirements to the different subfactors. This rating reflects a consensus of the ideas and views developed by the individual evaluators.

The purpose of this detailed description of the job evaluation committee is twofold: first, to clearly establish their widespread use within the context of the point method of job evaluation and, secondly, to point out that the outcome of the committee is a consensus rating achieved through group discussion.

The aspect of sex bias is an important issue in light of the increasing controversy over pay discrimination as well as the Equal Pay Act. The next section will discuss the potential sex biases which may exist in job evaluation, particularly with respect to the point method.

Potential Sex Bias in Job Evaluation

Many of the criticisms directed at job evaluation have come from the comparable worth theorists. Comparable worth is commonly defined as "equal pay for equal worth" and "equal pay for comparable worth." In other words, jobs which are evaluated as equal in worth or value to the organization should be paid equally (Blumrosen, 1979; Gasaway, 1981; Livernash, 1980; Nelson, Opton, & Wilson, 1980; Remick, 1981). The proponents of comparable worth suggest job evaluation could be useful in analyzing job worth (Livernash, 1980; Treiman & Hartmann,

1981). The problem is, however, that job evaluation may be biased thereby underevaluating female jobs.

A criticism of job evaluation instruments (particularly point methods) has been that they are biased on several factors (Blumrosen, 1979; Grant, 1951; Schwab, 1980; Treiman, 1979; Treiman & Hartmann, 1981). One potential source of bias could be the use of subjective judgments when developing job descriptions and in the overall job evaluation process. It has been suggested that sex stereotypes held by the evaluators may promote overestimates of male job requirements and underevaluation of female job requirements relative to their actual worth. Virtually no research exists which pertains directly to this issue. Treiman (1979) suggests, however, that female jobs are subject to lower ratings due to sex stereotyping. Research in the related area of job analysis provides evidence that sex stereotyping may not be an issue in job evaluation (Arvey, Passino, & Loundsbury, 1977). The PAQ, a job analysis instrument, was used to develop job descriptions of both male and female incumbents. While sex stereotyping did not significantly affect the development of the job descriptions, the impact of job stereotypes on job evaluation ratings has not been studied.

Another criticism of job evaluation instruments centers around the selection of factors and factor weights. Job evaluation instruments are most often developed by men and implemented by predominantly male job evaluation committees in order to measure male jobs (Frank, 1980; Wasem, 1980). Therefore, the factors chosen may focus on characteristics which are more appropriate for and give

higher mean ratings to traditionally male jobs. These factors may include skill, work, experience, physical effort, and working conditions (Blumrosen, 1979; Remick, 1981; Treiman, 1979). This results in female jobs being undervalued due to the inappropriateness of the job evaluation instrument. The descriptions of the different factors may also give more weight to characteristics of male jobs and, thus, undervalue the factor weights of female jobs. For example, the amount of previous experience may be used to identify the factor of skill. If this factor were instead operationalized as the amount of formal education required, female jobs would be given a more equitable rating since typically the previous experience required is minimal in female jobs.

Other biases in factor descriptions have been cited such as assessing physical effort in terms of pounds lifted rather than dexterity, describing physical effort as strength rather than fatigue, and using negotiating instead of counseling terms to describe interpersonal contacts (Blumrosen, 1980; Remick, 1981). It has been concluded by critics that job evaluation instruments measure the worth of male jobs better than female jobs (Treiman, 1979; Treiman & Hartmann, 1981).

Treiman (1979) also proposed that these instruments differentiate male jobs better than female jobs due to the factors and factor descriptions which are used. A study by Doverspike (1983) examined the effects of internal bias on a 15-factor job evaluation instrument. The instrument used both factors and factor descriptions which were purportedly biased toward females. Factors traditionally cited as

biased against females (i.e., physical effort, working conditions, and previous experience) as well as nontraditional, unbiased factors (i.e., manual dexterity, counseling, and education) were used. Traditional factors were not significantly biased against female jobs. Nontraditional factors were significantly biased against male jobs and were unreliable in evaluating job worth. The total point ratings for male and female jobs were reliably assessed, and the male and female jobs were adequately differentiated. Doverspike (1983) suggested factors should measure equally, interactions with people and things in order to provide job evaluation instruments which were unbiased.

The conclusions of the comparable worth theorists and the research on sex bias in job evaluation appear to disagree. This makes the role of job evaluation instruments in determining job worth difficult to interpret. Treiman (1979) suggests job evaluation instruments are more useful in proving wage discrimination than assessing job worth. Other comparable worth theorists, however, criticize the job evaluation instruments for producing a biased measure of job worth (Blumrosen, 1979). Clearly, more research is necessary in the area in order to resolve this dilemma.

The comparable worth theorists also regard job evaluation procedures as dependent on subjective judgments and biased, therefore, in favor of male jobs (Livernash, 1980; Schwab, 1980). If job evaluation instruments cannot make unbiased measures of job worth, independent of labor market figures, the technique is unreliable and, thus, should not be used.

In order to resolve the problems of the underevaluation of female jobs, more research is needed on the issue of sex bias. The present study will address this question of bias through looking at the sex of the evaluator. Both male and female evaluators will be used so that differences in their judgments can be assessed. Different job descriptions, previously rated as stereotypically male and stereotypically female, will also be evaluated so that the effects of bias due to stereotypes associated with the descriptions can also be ascertained. A supplementary analysis of the interaction of the stereotyped job descriptions and the point level of the stereotyped jobs (high and low stereotyped jobs will be used) will also be obtained.

The following section will discuss the research on consensus ratings. Since another major aspect of the present study is to determine the role consensus ratings play in job evaluation, the past research in this area is reviewed.

Consensus Ratings

Research on the role of consensus ratings in job evaluation is virtually nonexistent. One study was recently conducted, however, by Schwab and Heneman (1984) concerning a job evaluation system which utilized group consensus ratings of two noninteracting groups and multiple sources of job information. Results indicated no systematic rating error between the groups, high intergroup reliability on all but one compensable factor, and accurate prediction of job wage rates.

The study suggests current research should be directed toward investigation of this type of job evaluation system.

Other than Schwab and Heneman (1984), the only research related to this topic is found in the study of assessment center procedures. There are many similarities in the way consensus ratings are used in assessment centers and the way they are used in job evaluation. Cohen (1978) listed certain relevant characteristics of the consensus ratings in assessment centers. First, the ratings of the candidate are the "bottom line" and may have a significant effect on the candidate. The consensus ratings in job evaluation are also a "bottom line" because they determine the worth of the different jobs being evaluated. The job worth is then used to assign pay rates to the jobs which directly affects the salaries of the individual workers. Another characteristic of consensus ratings is that the final ratings are determined in a two-step process: The candidates are rated by each assessor individually and then discussion and debate occurs among the individual assessors to arrive at a final consensus rating. This is the same process used in the job evaluation committee (Henderson, 1982). Sackett and Hakel (1979) studied the individual ratings of the assessment center assessors. The results indicated that the assessors' patterns of ratings were found to be stable over time, a few performance dimensions consistently influenced the individual ratings of the assessors, and the assessors could also identify the dimensions which had the most effect on the overall decision. In other words, the assessors could identify the dimensions which were necessary in order to arrive at an overall consensus rating. This

thesis will focus on whether certain dimensions or factors appear to influence the group consensus ratings in job evaluation. A comparison of the individual factor ratings with the group consensus ratings will be analyzed.

A second problem to be explored concerns the group consensus judgment. Job evaluation methods utilizing consensus judgments endeavor to increase knowledge, increase support through participation, and increase credibility throughout the organization. A job evaluation committee allows for jobs to be analyzed by individuals with different levels of organizational, technical, and social expertise, thus increasing the reliability of job ratings. This result has been established in early research. One study required 10 evaluators to rate 20 production jobs independently using an 11-factor point system (Lawshe & Wilson, 1947). The average for the total score was $\underline{r}$ = .77, while average correlations between evaluator rating pairs ranged from .34 to .82 for the individual factors. Average ratings of five raters were randomly chosen and correlated with the remaining five raters' pooled ratings. The correlations which resulted ranged from .72 to .96 among the factors. The total score reliability coefficient was .94. Therefore, considering similar results have been replicated (Ash, 1948; Lawshe & Farbo, 1949), group consensus ratings appear to be more reliable than individual ratings and approximate the reliabilities for independently derived and pooled ratings.

Research in the area of group consensus judgment does not appear to be entirely consistent with past findings. Jones (1981) looked at interrater agreement across four separate assessment center exercises.

Prior to discussion, the interrater agreement ranged from .65 to .73 and after discussion ranged from .67 to .86. Sackett and Wilson (1982) revealed that no discussion was required among assessors for 78% of the candidates' consensus ratings. In addition, these group consensus judgments could have been made through use of the mean or average for 93.5% of all ratings made in the assessment center. The conclusion of the study indicated a mechanical rule could be substituted for the group consensus process. Borman (1982) found higher validities were obtained when the exercises were unit weighted rather than when using consensus judgments. Another study found a correlation of .70 between obtaining consensus ratings from a mechanical rule and from the consensus process (Gilbert, 1981). Therefore, no basis exists for concluding which procedure is better and whether the consensus discussion should be replaced by a mechanical rule approach (Zedeck & Cascio, 1984). The present study will look at the question of consensus judgment versus mechanical rule in the job evaluation method. An average of the individual ratings will be compared to the group consensus judgment in order to determine if the outcome of consensus discussion could have been predicted from these averages.

The rating patterns of the individual evaluators will also be compared with the group consensus judgment. Sackett and Wilson (1982) found that extreme ratings had more influence on the group consensus judgment than ratings in the midrange of the 5-point scale. In other words, the extreme ratings were more influential than the midrange ratings in arriving at a group consensus judgment. Cartwright (1973)

has discussed a related phenomenon termed "risky shift," where groups appear to be "riskier" than individuals. However, conceptual difficulties have been discussed concerning the definition of risk (Coombs, Donnell, & Kirk, 1978) and the assessment of risk without convergent validity (Slovic, 1964) raising doubts as to whether the risky shift phenomenon is a viable explanation of group risk taking processes. The theory has been expanded in that the shifts have also been found to occur in group decision tasks where no risk is involved and have, thus, developed into a general group polarization theory (Moscovici & Zavalloni, 1969). Myers and Lamm (1975) have stated that the group shift toward a more extreme rating may be a function of additional information being made available to the individuals originally making the extreme ratings. Therefore, these rating patterns may facilitate explanation of the consensus process as well as indicate possible situations where the mechanical rule procedure may not be appropriate.

The third aspect of consensus ratings to be explored is the biasing effects of the role of chairperson in job evaluation. Henderson (1982) suggests the job evaluation committee should be composed of individuals with different organizational backgrounds, varying technical experiences, and unique social viewpoints. In the real world, this may mean evaluation committees which are from the same or different organizational levels. Schmitt (1977) found no significant differences in influence for a team of four assessment center assessors. Klimoski, Freidman, and Weldon (1980) looked specifically at the influence of holding the role of chairperson.

The study simulated the assessment center consensus process and found prior experience with the candidate and formal voting rights affected the chairperson's rating by making it more influential on the group. The present study will attempt to address this possible source of bias in the job evaluation committee through attaining a measure of leadership. The chairperson may influence the group through leadership style. Chairpersons rated high on initiating structure, for example, may exert more control over group decision-making processes and, thus, alter the group consensus rating. A chairperson will be assigned in each group and the group members will rate the chairperson using the Leadership Behavior Description Questionnaire, Form XII (LBDQ XII, Stogdill, 1963). The chairperson will also rate himself/herself with the Leadership Opinion Questionnaire (LOQ, Fleishman, 1957).

Another aspect of leadership, sex of the chairperson, will also be examined. Research on supervisor performance ratings have been found to be influenced by the evaluator-evaluatee similarity in regards to race and sex (e.g., Hamner, Kim, Baird, & Bigoness, 1974; Pheterson, Kiesler, & Goldberg, 1971). As previously noted in the section entitled "Sex Bias in Job Evaluation," female jobs are subject to lower ratings due to sex stereotypes held by the evaluators. These stereotypes may lead to an overestimation of male job requirements and an underevaluation of female job requirements relative to their actual worth (Blumrosen, 1980; Frank, 1980; Treiman, 1979; Wasem, 1980). Based on these concepts, it is possible that the sex of the chairperson as well as the job stereotype could affect the consensus ratings of the job evaluation committee. The sex of the chairperson

will be manipulated in the present study so that half of the committees are chaired by male and half chaired by female chairpersons. The job stereotype will be tested through requiring each rater, including the chairperson, to evaluate jobs which have previously been stereotyped as male and female. The effect of the male or female chairperson versus job stereotype manipulation will be determined by calculating the mean number of changes per evaluator across the different evaluation committees.

The fourth area of consensus ratings to be examined concerns another factor which may bias the overall ratings. This factor is power. Sackett and Wilson (1982) examined the assessment center ratings of candidates for upper-level management. The assessors were a committee of three managers and two psychologists. A significant effect for influence, defined by the average number of changes per candidate, was found. Whether this effect is due to the biasing influence of power or leadership is uncertain. The influence of these factors on the group consensus judgment of the job evaluation committee is, however, worthy of further investigation. Therefore, in addition to the LBDQ XII, a power measure will also be administered. This measure, the Attributed Power Index (API, Holzbach, 1974), will be used to assess the social power attributed by the individual committee members. Chairpersons will rate themselves on a modified version of this measure as well.

Throughout this review of past research, the link between the proposed job evaluation study and the results of previous research in the areas of sex bias in job evaluation and consensus ratings in

assessment centers has been established. Since very little research has been done in these areas, with regard to the job evaluation method, the current research investigation represents the first attempt to examine the role of the consensus committee and its possible biases in job evaluation.

The purpose of the present study will be to examine the effect of chairperson (male vs. female), job stereotype (male vs. female), and job point level (high vs. low) on consensus ratings and on the influence of the chairperson. The dependent variables will include individual job evaluation ratings, consensus ratings, relative influence, perceived power, and leadership style.

Summary of Hypotheses

1. Treiman (1979) has suggested that female jobs are subject to lower ratings due to sex stereotyping. It is hypothesized that both male and female raters will rate male jobs higher than female jobs.

2. Doverspike (1983) obtained total point ratings for male and female jobs which were reliably assessed and the male and female jobs were adequately differentiated. Due to the fact that the same measure is to be used in the present study, it is hypothesized that high point level jobs will receive higher ratings and low point level jobs will receive lower ratings.

3. Sackett and Wilson (1982) found that extreme ratings had more influence on the group consensus judgment than midrange ratings. Therefore, it is hypothesized that extreme ratings of individual raters will influence the consensus ratings more than midrange ratings.

4. Gilbert (1981) found a correlation of .70 between obtaining consensus ratings from a mechanical rule and from the consensus process. It is hypothesized that the consensus ratings can be predicted using a mechanical rule (averaging individual ratings).

5-6. Research in the area of holding the role of chairperson in the job evaluation committee has been mixed. Klimoski, Freidman, and Weldon (1980) found assessment center assessors holding the role of chairperson had more influence if they had prior experience with the candidate and formal voting rights. Schmitt (1977) found no significant differences in influence for a team of four assessment center assessors. The exploratory variables of leadership and power will be linked to the chairperson role in order to offer some insight into this variable as well. These conflicting results and exploratory variables lead to the proposal of two hypotheses: (5) Chairpersons rated high on perceived power will have greater influence on the consensus rating; and (6) Chairpersons rated low on perceived power will have less influence on the consensus rating.

Exploratory Issues

1. Research on the effects of sex of chairperson, job point level, and job stereotype on consensus ratings is virtually nonexistent. Treiman (1979), Doverspike (1983), and Sackett and Wilson (1982) suggest these factors could have biasing effects on the consensus judgment process. Based on these findings, an investigation will be undertaken to determine the nature of these effects.

2. Sackett and Hakel (1979), Klimoski, Freidman, and Weldon (1980), and Schmitt (1977) have each attempted to determine the effects of the relative influence of the chairperson. Blumrosen (1980), Frank (1980), and Wasem (1980) have also determined sex stereotypes may be biasing factors in job evaluation. Therefore, the present study will examine the interaction between sex of rater and sex of chairperson in terms of the relative influence of the chairperson.

3. Sackett and Hakel (1979) studied individual ratings of assessment center assessors. This study revealed assessors could identify dimensions having the most effect on the overall decision. In accordance with this research, the present study will attempt identification of the job evaluation dimensions which raters disagree on and to what degree the disagreement exists for each scale.

4-5. As previously stated in Hypotheses 5-6, the influence gained from holding the role of chairperson has been a prominent topic in current research (Freidman & Weldon, 1980; Henderson, 1980; Schmitt, 1977). The effects of leadership on the role of chairperson are also of explanatory interest. Based on these factors, two exploratory issues will be investigated: (1) Chairpersons rated high on initiating structure will have greater influence on the consensus rating; and (2) Chairpersons rated low on initiating structure will have less influence on the consensus rating.

Chapter II

METHOD

Design

The main experimental design was a 2 x 2 x 2 factorial design. The three independent variables were sex of chairperson (male or female), job stereotype (male or female), and job point level (high-136 points or low-107 points). The job stereotype and job point level were within subjects factors.

Subjects

One hundred and sixty students, 80 males and 80 females, served as subjects. The subjects were divided into groups of four consisting of two males and two females. Twenty male and 20 female chairpersons were randomly selected by the experimenter for each group. The students were volunteers from the undergraduate psychology classes and had no prior experience with the job evaluation instrument.

Jobs

The criteria for selection of the jobs used in the present study were that the jobs had been stereotyped as male or female and matched on the individual point levels. The criteria of male or female stereotype was met through selecting two male and two female jobs from lists of stereotyped jobs previously developed by Doverspike (1983). Doverspike (1983) identified 105 male and 105 female jobs according to

the following procedure. The jobs were classified using Blumrosen's (1979) 80% criteria. This criteria states that 80% female occupancy should be used as the basis for identification of segregated jobs. Blumrosen's (1979) 80% criteria was applied to the 1981 current population survey (U.S. Department of Labor, 1982) and the 1970 census (U.S. Bureau of Census, 1973) data in order to identify stereotypically male and female occupations. Some of the occupational groupings were not listed in the current population survey due to small sample size. Therefore, the 1970 census was used for the occupational groupings. Only the occupational census groupings listed under the major headings of white-collar workers were used. This was done to avoid confounding possible sex bias with the appropriateness of using a job evaluation instrument for both office and factory jobs (Schwab, 1980). The Standard Occupational Classification Manual (U.S. Department of Commerce, 1980b) was used to convert the stereotypic census occupations to DOT codes. The Alphabetic Index of Occupations (U.S. Department of Commerce, 1980a) was used to check that each job was included in the stereotypic census occupations. The present study selected four jobs which had been rated, according to Blumrosen's 80% criteria, as stereotypically male and stereotypically female. The male jobs were stereo-plotter operator and mechanical research engineer. The female jobs were directory-assistance operator and word processing supervisor.

The second criteria for selection of the four jobs was the point level. Each job had been evaluated by experts in the Doverspike (1983) study and assigned a point value. The low point level chosen for the present study was 107 which included the jobs of stereo-

plotter operator and directory-assistance operator. The high point level was set at 136 which included the jobs of mechanical research engineer and word processing supervisor. These point levels were chosen because the majority of the jobs within them were fairly common and, thus, easier to rate. A job description was obtained from the fourth edition of the Dictionary of Occupational Titles (DOT; U.S. Department of Labor, 1977). These descriptions were transferred to individual sheets and are contained in Appendix A.

Job Evaluation Instrument

The Comprehensive Job Evaluation Technique (CJET) uses a 15-scale point method in evaluating jobs (see Appendix G, Addendum A). This instrument was developed by Doverspike (1983) based on a review of the Equal Pay Act and job evaluation instruments (Lanham, 1955; Otis & Leukart, 1954; Treiman, 1979).

A set of 10 traditional and 5 nontraditional scales were developed. The ten traditional scales were: Education, Time to Proficiency, Previous Experience, Mental Effort, Physical Effort, Supervisory Responsibility, Financial Responsibility, Responsibility for the Safety of Others, Surroundings, and Hazards. The five nontraditional scales were: Manual Dexterity, Monotony, Visual Effort, Counseling and Teaching, and Negotiating and Influencing. The first three nontraditional scales may possibly be biased in favor of female jobs and, thus, were included (Remick, 1981). These have been used infrequently for the measurement of office and professional jobs. Social interaction measures were included as the last two

nontraditional scales. One scale emphasized teaching and counseling and the other emphasized negotiating and influencing. Otherwise, the wording of the scales was identical.

Each scale was composed of a summary description and five items or anchors. The scales ranged from 1 to 5 points with a total point range of 15 to 75. The definitions of the anchors were based on a review of the job evaluation literature.

Doverspike (1983) reported the inter-rater reliability and the internal consistency based on generalizability.theory. The generalizability coefficient for the total point score was calculated with a rater by job ANOVA. The generalizability coefficient for four raters was .91. The internal consistency for the CJET instrument was calculated at α = .80 for the total job sample.

The validity of the CJET instrument was assessed through calculating correlations between the CJET factors and the DOT scales. These correlations were generally significant. A factor analysis was also conducted in order to obtain construct validity for the ratings. The CJET and DOT measures which had similar constructs loaded on the same factors.

Procedure

Participation in the present study was on a voluntary basis. Upon entering the experimental session, subjects were given a packet containing a copy of the CJET manual (see Appendix G, Addendum A), a rating form for each job (see Appendix B), and the four job descriptions (see Appendix A). Subjects were given a 15-minute

training session on the use of the CJET. The guidelines illustrated in the CJET training manual were followed (see Appendix G). After this training session, the subjects were divided into groups of four and asked to make individual ratings. The subjects were given 1 hour to complete their individual ratings. A chairperson was appointed by the experimenter for each group. For the next 45 minutes, the subjects were asked to discuss the ratings and to arrive at a final group consensus for each of the 15 dimensions. Finally, the subjects were given the leadership and the power questionnaires as well as the general leadership impression item, the functional leadership behavior questionnaire, and the job stereotype questionnaire. The last two questionnaires listed are found in Appendices F and G. The general leadership impression is the last item on each of the chairperson and group member leadership questionnaires (see Appendix D). These took approximately 30 minutes to complete. The entire experimental session lasted approximately 2 hours and 15 minutes. The manipulations were as follows:

Sex of Chair Manipulation

There were two situational contexts in which the consensus ratings were made. The groups performed the consensus rating task with either a male or a female chairperson. The role of chairperson was randomly assigned by the experimenter.

Job Stereotype Manipulation

Each subject rated four jobs which were stereotyped as male or female. Since raters of both sexes rated stereotypically male and female jobs, the effects of job stereotype on the ratings of males and females could be assessed.

Job Level Manipulation

Jobs were rated which had been evaluated as having a high or low point value. Two high level and two low level jobs were evaluated by each subject. The effects of point level on individual and consensus ratings were assessed.

Measures

Leadership

Leader Behavior Description Questionnaire Form XII (LBDQ XII). This measure obtains descriptions of a leader's behavior from the people they supervise (see Appendix C--Leadership Questionnaire, Group Member). The raters must be able to observe the individual's behavior as a leader of their group.

Stogdill (1963) originally developed the LBDQ XII in order to measure 12 aspects of leader behavior. However, the instrument is rarely administered in its complete form (Cook et al., 1981). The subscales of Initiating Structure and Consideration have been used most often and, thus, will be used in the present study. These two subscales may be defined as follows: (1) Initiating Structure--defines his or her role clearly and makes sure followers know what is expected of them; (2) Consideration--is concerned about the well-being, comfort, and contribution of his or her followers.

Each of these subscales contain 10 items. The scales for the items range from 5 to 1 and have response dimensions running from always to never. The scores are summed within each subscale. The Kuder Richardson Internal Reliabilities for Consideration and Initiating Structure are .76 and .79, respectively (Stogdill, 1963).

One item in the consideration subscale was eliminated because it was incongruent with the experimental situation.

Leader Opinion Questionnaire (LOQ). The LOQ is a measure of the leader's opinion of how he or she should behave as a group supervisor (see Appendix C--Leadership Questionnaire, Chairperson). This instrument is similar to the LBDQ in that it also uses the constructs of Consideration and Initiating Structure. However, the LOQ focuses on the leader's opinion of himself or herself rather than the group member's descriptions of his or her behavior.

The instrument consists of 40 items, 20 items for the Consideration subscale and 20 items for the Initiating Structure subscale. Twelve items are reverse scored, 10 in the Consideration subscale and 2 in the Initiating Structure subscale. The scores are summed within each subscale. The items are scored 4 to 0 with 5 alternatives each. Three different sets of verbal anchors are used. The individual items from the two subscales are systematically interspersed during presentation. Fleishman (1963) reported that the LOQ measured the two constructs of Consideration and Initiating Structure independently, both with reliability coefficients which exceeded .69. Four items from the consideration subscale and six items from the initiating structure subscale were eliminated because they were incongruent with the experimental situation.

Power

The Attributed Power Index (API). The API measures a person's attributed social power through the ratings of the recipient in a power relationship. In the present study, the group committee members

will evaluate the chairperson of their groups and the chairperson's will also evaluate their own behavior regarding power (see Appendix D). This measure was developed by Holzbach (1974) in order to obtain a valid measure of social power. The API is based on French and Raven's (1959) five types of power and contains the following corresponding subscales: Reward, Coercive, Legitimate, Referent, and Expert.

The instrument consists of 25 items each with a 7-point response dimension ranging from extremely inaccurate to extremely accurate. The items are scored from 7 to 1, respectively, and summed within each subscale. The items from each subscale are distributed evenly throughout the instrument.

Holzbach (1974) demonstrated that the scale exhibited high internal consistency (from .74 to .94) as well as test-retest reliability (from .61 to .81 over a two-day period). The instrument also appeared to have construct validity as demonstrated by large positive correlations with relevant criteria, e.g., from .66 to .85.

Relative Influence

The relative influence of the chairperson will be measured through calculating the frequency with which an evaluator changes an individual rating during consensus discussion. Since there are 15 dimensions, an evaluator could make up to 15 changes for each job assessed.

General Leadership Impression (GLI). The GLI measures the amount of leadership which was exhibited globally by the leader (Lord, Phillips, & Rush, 1980). The scale consists of a 7-point Likert scale item which asks either "how much leadership was exhibited by the

chairperson of your group" or "how much leadership was exhibited by you as the chairperson of the group" (see Appendix C--Item 20 in the Group Member Leadership Questionnaire and Item 31 in the Chairperson Leadership Questionnaire). The item was scored with scale anchors from none (1) to an extreme amount (7). The scores were summed within the scale in order to arrive at an average score across subjects. This scoring procedure was a modified version of the one used by Lord et al. (1980).

Functional Leader Behavior (FLB). Lord (1977) developed the FLB in order to classify functional leadership behavior into 1 of 12 categories (see Appendix E). The instrument consists of 12 items which list different leadership behaviors a person might exhibit. The items were scored differently than Lord (1977). They ranged from 0 to 1, with 0 meaning the respondent felt one of the group members did the most of the behavior, and 1 meaning the rater felt the chairperson did the most of the behavior. The scores were summed in order to obtain an average FLB rating for the groups.

Job Stereotype Questionnaire (JSQ). The JSQ was developed in order to assess the degree to which jobs were stereotyped as male or female (see Appendix F). The scale consists of two items. The first item asks, "What percentage of workers in the jobs you have just read about are male as opposed to female?" The item was scored 1 to 5, with 0-20% valued as a 1 and 81-100% valued as a 5. The second item asks, "To what extent is the job typically male or female?" The item was evaluated on a single 5-point Likert scale ranging from extremely female (1) to extremely male (5). The scores were summed by job in order to arrive at an average score across all subjects.

Chapter III

RESULTS

Manipulation Checks

While not manipulation checks in the true sense of the term, two measures, the General Leadership Impression (GLI) and the Functional Leader Behavior (FLB) Questionnaires, were used in order to establish if the sex of chairperson manipulation had an impact on leadership perceptions. The GLI was a 7-point Likert scale item [ranging from None (1) to an Extreme Amount (7)] which indicated, in general terms, the amount of leadership exhibited by the chairperson. A *t* test was calculated for the 40 male and female chairpersons' ratings of their own behavior to assess sex differences in self-perceptions: male chairpersons, $\overline{X}$ = 4.70, *SD* = .80, and female chairpersons, $\overline{X}$ = 4.35, *SD* = 1.04. The *t* test indicated no significant difference was found, $t(38) = 1.19$, $p > .05$. A second *t* test was also performed on the 120 group members' ratings of the male and female chairpersons to assess possible sex differences in terms of group members' perceptions of the chairperson: male chairpersons, $\overline{X}$ = 4.72, *SD* = 1.67, and female chairpersons, $\overline{X}$ = 4.75, *SD* = 1.41. The *t* value for this comparison was not significant: $t(118) = .14$, $p > .05$. Therefore, sex of chairperson had no impact on self- or others' perceptions of leadership.

The Functional Leader Behavior Questionnaire (FLB) was analyzed with a *t* test for the differences in sex of chairperson ratings. The range of ratings for the 12 items on the questionnaire was from 0

to 1. Subjects were to indicate 0 if another group member exhibited the most of the behavior and 1 if the chairperson exhibited the most of the behavior. A total of 12 points was the highest score possible on the questionnaire indicating the chairperson exhibited the most of each of the 12 leadership dimensions. No significant differences were found between the 160 group members' ratings of male and female chairpersons, $\underline{t}(158) = .15$, $\underline{p} > .05$. The means and standard deviations were $\overline{X} = .12$, $\underline{SD} = .05$ for male chairpersons, and $\overline{X} = .12$, $\underline{SD} = .05$ for female chairpersons. The overall mean (.12) indicated most group members did not attribute these leadership behaviors to the chairperson. Since the scales were summed across items, an estimate of the homogeneity of the items was appropriate. Coefficient alpha was used in order to calculate the average correlation of items within the questionnaire. The internal consistency for the FLB was low, $\alpha = .41$. The small size of this coefficient leads one to question the use of the FLB in measuring the functional leader behavior attributed to the chairperson.

The third manipulation check for job stereotype, the Job Stereotype Questionnaire (JSQ), was analyzed with a correlated $\underline{t}$ test for each question on the instrument. The first question asked the 160 subjects to indicate the percentage of males working in the job. The means and standard deviations were $\overline{X} = 8.18$, $\underline{SD} = 1.09$ for the male jobs, and $\overline{X} = 4.11$, $\underline{SD} = 1.73$ for the female jobs. The $\underline{t}$ value was significant, $\underline{t}(159) = 23.60$, $\underline{p} < .001$, indicating the male jobs (Mechanical Engineer and Stereo-plotter Operator) were rated as having a higher percentage of males in the male jobs than in the female jobs

(Word Processing Supervisor and Directory-Assistance Operator). The second question on the JSQ asked which jobs were typically male or female and was scored on a 1 (Extremely Female) to 5 (Extremely Male) Likert-type scale. The means and standard deviations for the question were as follows: male jobs, $\overline{X}$ = 8.33, $\underline{SD}$ = 1.03; and female jobs, $\overline{X}$ = 4.01, $\underline{SD}$ = 1.24. The $\underline{t}$ value was significant, $\underline{t}(159) = 28.99$, $\underline{p} < .001$, indicating male jobs were rated as typically male and female jobs were rated as typically female.

A summary of the manipulation checks indicated:

1. Male and female chairpersons were not rated differently concerning the amount of leadership or the number of functional leader behaviors exhibited. Therefore, chairpersons were not perceived as leaders.

It should be noted that being the chairperson may not affect these leadership measures due to the fact that chairpersons were in an administrative role rather than a true leadership position. The experimental situation did not provide an actual manipulation of leadership in the group.

2. Male and female jobs were stereotyped appropriately, thus, the job stereotype manipulation affected the subjects' perceived sex of the job.

Sex of Rater, Job Stereotype, and Job Point Level-- Hypotheses 1 and 2

A 2 (Sex of Rater) x 2 (Job Point Level) x 2 (Job Stereotype) ANOVA design with repeated measures for point level and stereotype was

used to test Hypothesis 1. This hypothesis stated that both male and female raters would rate male jobs higher than female jobs. A significant main effect was found for Sex of Job, $F(1, 158) = 327.17$, $p < .001$ (see Table 1). The means and standard deviations for the 4 jobs rated are listed in Table 2. The overall mean for the male jobs was 44.15. The overall mean for the female jobs was 37.24. Therefore, Hypothesis 1 was supported.

The interaction between sex of rater and job stereotype was nonsignificant, $F(1, 158) = 1.97$, $p > .05$. This reinforces the fact that male and female raters rated stereotyped jobs in the same way. Male jobs were always rated higher.

The assumptions for analysis of variance were tested for each factorial design used in the present study. Independent random samples were used and data conformed to an interval scale. Each sample was selected from a normally distributed population with common variance (as indicated by the Cochran's test). The Cochran's test for homogeneity of variance was used in order to ensure that the variance of the error term was the same for all treatment populations. This test uses a larger amount of information in the sample data and is generally more sensitive than Hartley's test. The Cochran test for this particular ANOVA indicated, $C(79, 2) = .523$, $p > .05$, which was nonsignificant.

An Omega squared was also calculated for this effect which contrasts the variability due to experimental manipulations with the total experimental variability. The statistic reflects the amount of variance accounted for by the treatment. The stronger the experimental

Table 1

Analysis of Variance Summary for the Effect of Sex of Rater (SEX), Job Stereotype (SEXJ), and Job Point Level (POINT) on Individual Ratings

Source of Variance	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Subjects	159	13021.38		
SEX	1	79.81	79.81	.97
Error	158	12941.57	81.91	
Within Subjects	480	49159.03		
SEXJ	1	8970.03	8970.03	327.17*
SEX x SEXJ	1	54.06	54.06	1.97
Error	158	4331.92	27.417	
POINT	1	29322.23	29322.23	1361.67*
SEX x POINT	1	1.41	1.41	.065
Error	158	3402.37	21.53	
SEXJ x POINT	1	.23	.23	.012
SEX x SEXJ x POINT	1	.306	.306	.016
Error	158	3076.47	19.47	

*$p < .001$

Table 2

Comparison of Means and Standard Deviations for

Sex of Rater by Job Stereotype by Job Point Level

Job	Male Raters	Female Raters
Male Stereotype		
Mechanical Research Engineer[a]		
Mean	50.96	50.79
SD	6.37	7.89
Stereo-plotter Operator[b]		
Mean	37.34	37.26
SD	5.82	6.56
Female Stereotype		
Word Processing Supervisor[a]		
Mean	44.06	42.64
SD	6.02	44.06
Directory-Assistance Operator[b]		
Mean	30.43	30.43
SD	4.04	4.04

Note. N = 160

[a]High Point Level

[b]Low Point Level

effect the larger the Omega squared becomes (.05 or above has been suggested as an acceptable level for the index). The Omega squared value for this effect was .096 (10% of the variance was accounted for). The practical significance of this effect for job evaluation was that less variance should be explained by factors such as job stereotype which bias the job evaluation instrument. Therefore, the fact that this value was small was not undesirable.

Hypothesis 2 was tested with the 2 x 2 x 2 factorial design used above which predicted that high point level jobs would receive higher ratings and low point level jobs would receive lower ratings. A significant main effect was found for job point level, $F(1, 158) = 1361.67$, $p < .001$ (see Table 1). The Cochran's was used to test the homogeneity of variance assumption, $C(79, 2) = .560$, $p > .05$. This value was nonsignificant demonstrating common variance within the sample. Using the means, in Table 2, the high point level jobs had an overall mean of 47.51, while the overall mean for the low point level jobs was 33.88. Hypothesis 2, therefore, was also supported. The practical significance of this effect was calculated with an Omega squared ($\omega = .318$). The index indicates that this effect accounted for approximately 32% of the variance. In a job evaluation instrument this value might be considered low due to the fact that these levels would be used to differentiate between jobs. The size of the index would be influenced however, by the number of jobs which were rated and the differences in the point level totals for the high and low jobs.

Individual and Group Consensus Rating Patterns-- Hypothesis 3

The analysis of Hypothesis 3, extreme ratings of individual raters will influence the consensus ratings more than midrange ratings, was proposed in order to further understand the consensus process in terms of disagreement resolution. The values in Table 3 were obtained through first calculating the difference pattern for each of the 15 dimensions used by the 40 groups of raters to evaluate the 4 jobs. This encompasses 2,400 rating patterns. The difference pattern was derived through taking the individual ratings made by each of the 4 group members (e.g., 1-1-1-3) and calculating the difference pattern between these ratings (e.g., 0-0-2). These difference patterns were separated into categories, rating patterns in total agreement (e.g., 1-1-1-1) were eliminated, and, of the remainder, 90% of the most common ratings were used.

These ratings were classified into 1 of 7 possible types of disagreement patterns. These patterns may be summarized as follows: Type 1--three evaluators agreed, one rated higher (e.g., a rating pattern of 1-1-1-3); Type 2--three evaluators agreed, one rated lower (e.g., 1-3-3-3); Type 3--two evaluators agreed, one rated higher, one rated lower (e.g., 1-2-2-3); Type 4--two evaluators agreed, one rated either one or two points higher, and the other rated either two or three points higher (e.g., 1-1-2-3 or 1-1-2-4); Type 5--two evaluators agreed, one rated either one or two points lower, and the other rated either two or three points lower (e.g., 1-2-3-3 or 1-3-4-4); Type 6--two coalitions were formed which were either one or

Table 3

Frequency of Individual Rating Patterns and Accompanying Group Consensus Ratings

Type	N	Rating Pattern	n	Group Consensus Rating (%) 1	2	3	4	5
1	474	1-1-1-3	36	89	8		3	
		2-2-2-4	8	12	88			
		3-3-3-5	20			100		
		1-1-1-2	247	93	6	.8	.4	
		2-2-2-3	57		95	5		
		3-3-3-4	48			98	2	
		4-4-4-5	56				96	4
2	302	1-3-3-3	13			100		
		2-4-4-4	31		3	6	90	
		3-5-5-5	22				5	95
		1-2-2-2	70	7	93			
		2-3-3-3	29		3	97		
		3-4-4-4	77			1	99	
		4-5-5-5	60					100
3	306	1-2-2-3	70	9	87	3	1	
		2-3-3-4	58	2	2	95	2	
		3-4-4-5	93		1	4	87	8
		1-2-2-4	23		83	9	9	
		2-3-3-5	22		5	95		
		1-3-3-4	19		5	84	11	
		2-4-4-5	21			14	81	5
4	174	1-1-2-3	59	49	51			
		2-2-3-4	27		56	41	4	
		3-3-4-5	56			38	63	
		1-1-2-4	27	44	33	15	7	
		2-2-3-5	5		60	20		20
5	191	1-2-3-3	32	3	63	34		
		2-3-4-4	57		5	54	40	
		3-4-5-5	54			6	54	41
		1-3-4-4	27		19	33	48	
		2-4-5-5	21			10	57	33
6	382	1-1-2-2	143	51	49			
		2-2-3-3	34		53	44	2	
		3-3-4-4	75		1	45	53	
		4-4-5-5	79		1		43	56
		1-1-3-3	14	14	36	50		
		2-2-4-4	14		14	64	21	
		3-3-5-5	23			22	26	
7	87	1-2-3-4	31	13	39	35	13	
		2-3-4-5	56		4	34	54	9

two points apart (e.g., 1-1-2-2 or 1-1-3-3); and Type 7--disagreement existed between each evaluator (e.g., 1-2-3-4). Table 3 illustrates the frequency of the 7 patterns of disagreement and also indicates the final group consensus rating.

Table 3 indicates a general tendency for the rating in the majority to be chosen the highest percentage of the time regardless of the extremeness of the ratings. In this study, extreme ratings were defined as a 1 or 5 and midrange ratings as a 2, 3, or 4. Types 1 and 2 serve as examples of the tendency to choose the most common rating. In Type 1, when three evaluators agreed that held an extreme rating of 1, (in the 1-1-1-2 rating pattern, for example) that rating was chosen 93% of the time. When the three evaluators held a midrange rating of 2, 3, or 4, that rating was chosen an even greater percentage of instances (95% for 2-2-2-3, 98% for 3-3-3-4, 96% for 4-4-4-5). In order to conclude that extreme ratings had a greater influence than midrange ratings, the percentage of 93 would have had to have been greater than the majority of the midrange rating percentages (95, 98, and 96). The same explanation applies to the rating patterns in Type 2. In two rating patterns in the category, an extreme rating of 5 was chosen by the majority of the consensus group (three raters). The rating patterns were 3-5-5-5 and 4-5-5-5. These percentages (95 and 100) were not greater than each of the midrange rating percentages. This explanation can be summarized, for the first six types of rating patterns, as follows: When the rating patterns involved majority ratings which were extreme (1's or 5's), the percentages for these patterns should have been larger than the

majority of the percentages which had the greatest number of ratings in the midrange (2's, 3's, or 4's) in order to conclude that extreme ratings had more of an influence. This did not occur, therefore, Hypothesis 3 was not supported.

Type 7 illustrates a rating pattern in which each rater disagrees. An averaging rule appeared to have been used in these instances. The average of the pattern 1-2-3-4 was 2.5. The highest consensus percentages for this pattern were for the ratings of 2 and 3. Therefore, the groups attempted to stay within an average rating range. The same results were also consistent with the second rating pattern in this category.

Prediction of the Outcome of the Consensus Discussion-- Hypothesis 4

Hypothesis 4, which suggested the use of a mechanical rule in order to predict consensus ratings, was tested initially using Pearson correlation coefficients. Correlations were obtained between the means of the groups' individual ratings and the means of the groups' consensus ratings for each of the four jobs. The correlations for the 40 groups were obtained as follows: Mechanical Research Engineer, $r = .85$, $p < .001$; Stereo-plotter Operator, $r = .75$, $p < .001$; Word Processing Supervisor, $r = .85$, $p < .001$; and Directory-Assistance Operator, $r = .72$, $p < .001$. These results demonstrate a moderate to high correlation existed between individual and consensus rating means.

Further analyses were conducted which used the mean of the 4 evaluators' individual ratings to predict the consensus rating (e.g.,

means from 1.50 to 2.49 = 2). Thus, each evaluator's rating was weighted equally when arriving at the consensus rating. In 72.5% of the rating instances, the mean correctly predicted the consensus rating. When the instances were included where evaluators' individual ratings were in agreement, the consensus rating could be predicted for 71.7% of the total rating instances.

Relative Influence and Power--
Hypotheses 5 and 6

Hypotheses 5 and 6 proposed that chairpersons rated high on perceived power would have greater influence and those rated low on perceived power would have less influence on the consensus rating. Relative influence was defined as the frequency with which an evaluator changed a rating during consensus discussion. The power measurement was derived from the Attributed Power Index (API; Holzbach, 1974). Due to the fact that the measure was summed across questionnaire items, an average correlation among items was obtained in order to insure homogeneity existed. The internal consistencies for the group members' questionnaire ratings (α = .88) and the chairpersons' questionnaire (α = .83) were high. Although the power variable did not appear to affect influence, these figures indicate the API was measuring the construct reliably. The correlation between the API for group members and relative influence was $\underline{r}$ = .08, with an $\underline{N}$ of 120. This correlation was not significant. The correlation between the API for chairpersons and relative influence was $\underline{r}$ = .12, with an $\underline{N}$ of 40. This was also nonsignificant. Due to the lack of significance within

these correlations, no further analyses were undertaken. These findings indicate chairpersons were not perceived as having power by the group members.

Sex of Chairperson, Job Stereotype and Job Point Level-- Exploratory Issue 1

The first exploratory issue, determine the effects of sex of chairperson, job point level, and job stereotype on consensus ratings, was examined using a 2 x 2 x 2 ANOVA design with repeated measures for job point level and job stereotype. A significant main effect was found for job stereotype, $F(1, 158) = 992.32$, $p < .001$ (see Table 4). A Cochran's test indicated, $C(79, 2) = .51$, $p > .05$, demonstrating homogeneity of variance for the sample. Table 5 lists the means and standard deviations of the consensus ratings for the four jobs evaluated. The overall mean for the male stereotyped jobs was 43.93. The overall mean for the female stereotyped jobs was 36.28. An Omega squared was calculated in order to determine the amount of variance accounted for and the practical significance of this effect. The Omega squared value was .142. This meant approximately 14% of the variance was accounted for by the job stereotype. Therefore, a relatively small amount of variance was explained by job stereotype indicating bias in the job evaluation instrument was not overwhelming.

A significant main effect was also found for job point level, $F(1, 158) = 2990.74$, $p \leq .001$. The overall mean for the high point level jobs was 47.48. The overall mean for the low point level jobs was 32.73. A Cochran's value was also calculated for this effect,

Table 4

Analysis of Variance Summary for the Effects of Sex of Chairperson (SEXOFCP), Job Stereotype (SEXJ), and Job Point Level (POINT) on Consensus Ratings

Source of Variance	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Subjects	159	5078.40		
SEXOFCP	1	51.76	51.76	1.63
Error	158	5026.64	31.81	
Within Subjects	480	51061.51		
SEXJ	1	10096.51	10096.51	992.32*
SEXOFCP x SEXJ	1	14.40	14.40	1.42
Error	158	1607.60	10.18	
POINT	1	34928.10	34928.10	2990.74*
SEXOFCP x POINT	1	.16	.16	.01
Error	158	1845.24	11.68	
SEXJ x POINT	1	438.91	438.91	33.31*
SEXOFCP x SEXJ x POINT	1	48.40	48.40	3.67
Error	158	2082.19	13.18	

*$p < .001$

Table 5

Comparison of Means and Standard Deviations for Sex of Chairperson by Job Stereotype by Job Point Level Manipulation

Job	Male Chairpersons	Female Chairpersons
Male Stereotype		
Mechanical Research Engineer[a]		
Mean	51.85	53.30
SD	3.63	42.21
Stereo-plotter Operator[b]		
Mean	36.00	36.29
SD	4.53	4.41
Female Stereotype		
Word Processing Supervisor[a]		
Mean	43.10	42.85
SD	3.71	5.25
Directory-Assistance Operator[b]		
Mean	29.46	30.25
SD	2.50	3.90

Note. N = 160

[a]High Point Level

[b]Low Point Level

$C(79, 2) = .514$, $p > .05$, demonstrating homogeneity of variance existed. The Omega squared value for this effect was .492 (meaning approximately 49% of the variance was accounted for). The practical significance of this effect was that job point level should account for a substantial amount of the variance because this leads to improved differentiation among jobs. This value would have been altered depending on the number of jobs rated and the different point levels used.

The third significant effect was the interaction between job stereotype and point level, $F(1, 158) = 33.31$, $p \leq .001$. The Omega squared calculated for this effect was .006. Due to the small size of this value, any interpretation of the following simple effects should be made with caution.

Figure 1 depicts the job stereotype by point level interaction. Simple effects were calculated for job stereotype within point level: job stereotype at high point level, $F(1, 158) = 559.48$, $p < .001$; and job stereotype at low point level, $F(1, 158) = 239.99$, $p < .001$. In conclusion, female jobs were rated lower than male jobs across point levels. However, at high point levels, female jobs were rated lower than male jobs to an even greater extent than at low point levels. This interaction may be better explained as an extension of the main effect for job point level due to the fact that such a large amount of variance was explained by this main effect.

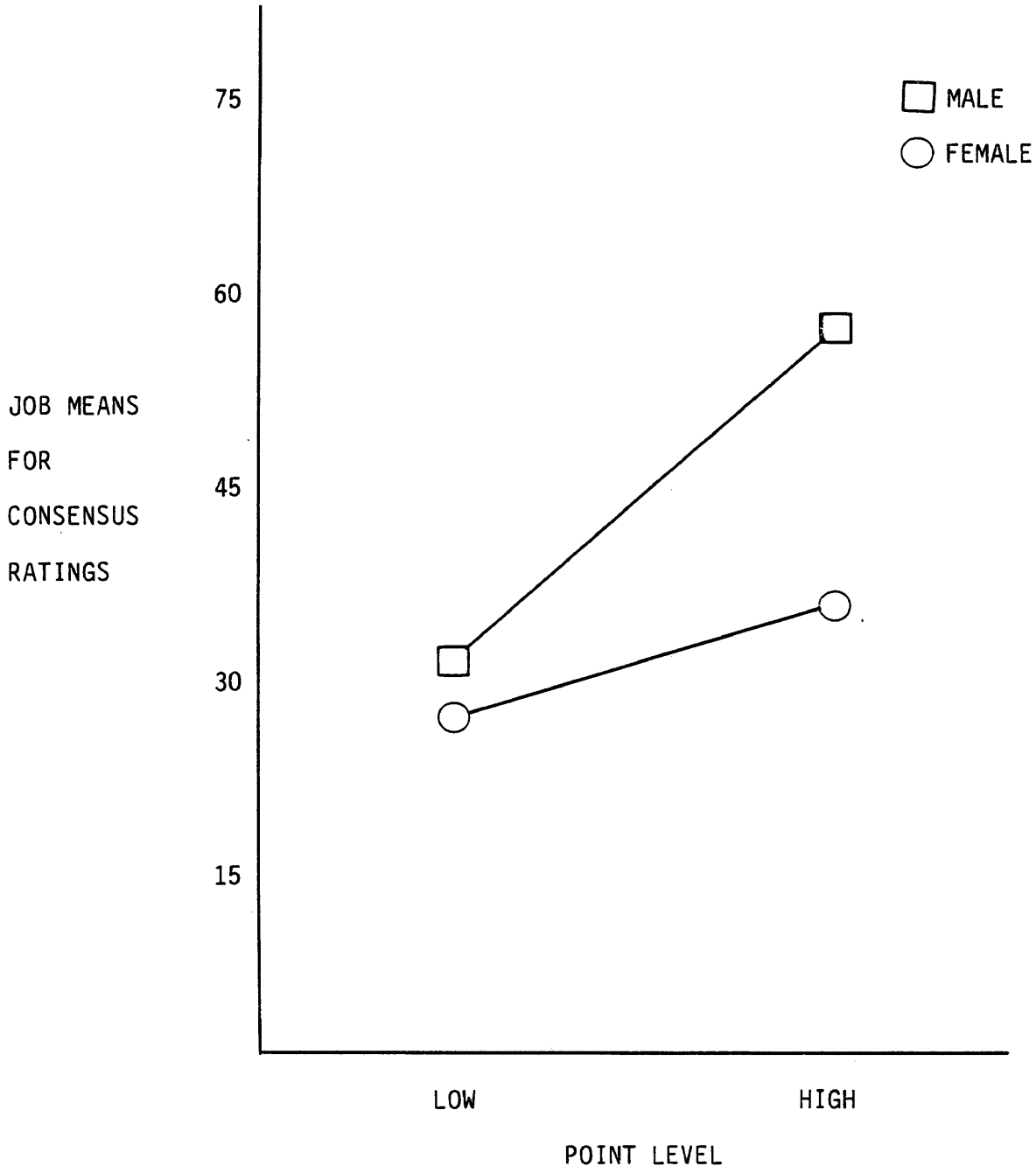

Figure 1. Interaction Effect of Job Stereotype by Point Level.

Sex of Rater, Sex of Chairperson, and Relative Influence--Exploratory Issue 2

The second exploratory issue was to examine the interaction between sex of rater and sex of chairperson in terms of relative influence of the chairperson. Relative influence of the chairperson was evaluated according to the mean number of changes made by individual raters per group. The larger the number of changes made, the greater the influence of the chairperson. The mean number of changes made per group by individual raters with male or female chairpersons was obtained: females with female chairpersons, $\overline{X}$ = 25.92; males with female chairpersons, $\overline{X}$ = 24.58; females with male chairpersons, $\overline{X}$ = 25.00; and males with male chairpersons, $\overline{X}$ = 23.95. There was a total of 40 groups in the present study.

A 2 (Sex) x 2 (Sex of Chairperson) analysis of variance (ANOVA) design indicated no interaction existed between sex and sex of chairperson in terms of relative influence of the chairperson, $F(1, 159) = .03$, $p > .05$ (see Table 6). In order to test for homogeneity of variance, Cochran's test was used, $C(39, 4) = .312$, $p > .05$, indicating nonsignificance. These results demonstrate that sex of chairperson or individual rater does not appear to be an important factor in regard to relative influence.

Frequency of Disagreement Among Evaluators--Exploratory Issue 3

Regarding Exploratory Issue 3, it was noted 160 evaluators rating 4 jobs on 15 dimensions created a data set of 2,400 individual

Table 6

Analysis of Variance Summary for the Effect of Sex of Rater (SEX) and Sex of Chairperson (SEXOFCP) on Relative Influence

Source of Variance	Degrees of Freedom	Sum of Squares	Mean Square	F
Treatments	3	82.525		
SEXOFCP	1	24.03	24.03	.85
SEX	1	57.60	57.60	2.04
SEXOFCP x SEX	1	.90	.90	.03
Error	156	4400.45	28.208	

ratings. In 1,883 (or 78.5%) of these rating instances, individual evaluators made ratings that were either 0 or 1 scale point apart. Thus, there were 517 instances when raters differed by 2 or more scale points, thereby indicating disagreement.

Table 7 presents a summary of the 517 instances of disagreement. These are divided into the percentage of disagreement existing within each of the 15 dimensions for the 4 jobs rated. The range of disagreement which occurred is also demonstrated in the table (from a low of 1.2% for education to a high of 11.2% for financial responsibility).

Relative Influence and Leadership Style-- Exploratory Issues 4 and 5

Exploratory Issues 4 and 5 examine the effect of relative influence of the chairperson in relation to the leadership style of initiating structure. Pearson correlation coefficients were calculated in order to determine if the variables were correlated significantly. A correlation between relative influence and the chairpersons' ratings of initiating structure [derived from the Leadership Opinion Questionnaire (LOQ); Fleishman, 1963] indicated with an N of 40, r = -.02, which was nonsignificant. The LOQ was linearly summed, therefore, the internal consistency reliability was calculated. An alpha coefficient was obtained which was moderate (α = .71). This value indicated the measure provided ratings of chairpersons' behavior which were within the range of an acceptable scale. The correlation between group members' ratings of initiating

Table 7

Frequency of Disagreement Among Evaluators by Dimension

Dimension	% Disagreement
Education	1.2
Time to Proficiency	9.9
Previous Experience	7.7
Mental Effort	6.8
Visual Attention	5.6
Physical Effort	3.3
Manual Dexterity	9.7
Supervisory Responsibility	8.9
Financial Responsibility	11.2
Safety of Others	8.5
Counseling and Teaching	6.4
Negotiating and Influencing	6.8
Surroundings	3.1
Hazards	1.7
Monotony	9.3

Note. The percentages in this table are calculated from the 517 instances when raters disagreed by more than 2 scale points.

structure [derived from the Leader Behavior Description Questionnaire, (LBDQ); Stogdill, 1963] and relative influence was .06, with an N of 120, which was also nonsignificant. An α of .86 was obtained for the LBDQ. These correlations demonstrate a lack of significance, therefore, no further analyses were made.

In conclusion, the results of the present study indicate that job stereotype and job point level significantly affected both individual and consensus ratings. Sex of the chairperson, sex of the rater, and relative influence of the chairperson, as well as the exploratory variables of leadership and power did not appear to affect either type of ratings. The hypotheses which dealt with disagreement among dimensions and the extreme ratings did not concur with the results found by Sackett and Wilson (1982) in the assessment center. The mechanical rule hypotheses, or averaging rule, did predict the consensus ratings from individual ratings. This further supported the idea of a "majority rules" process having operated within the group.

Chapter IV

DISCUSSION

The present study provides important information concerning the consensus judgment process in job evaluation. One of the most interesting findings concerns the higher ratings male jobs of similar point value received by both male and female raters. Doverspike (1983) suggested four reasons why this type of bias might occur. First, factor weights may be chosen which give male jobs more weight, such as physical effort and working conditions. Second, factors may be selected that allow males to obtain higher mean ratings than females. Third, the job descriptions used may be biased. Because these stimuli are biased toward males, raters may inflate their evaluations of task and worker requirements for male jobs, thereby devaluing female jobs. Fourth, the evaluators themselves may be biased and, thus, may give higher ratings to traditionally male jobs and lower ratings to traditionally female jobs.

The first issue concerning factor weights was investigated by Cooper, Doverspike, and Barrett (1982). The results indicated that the variability of factor importance ratings was minimally explained by rater sex. In addition, a high correlation was obtained for job evaluation ratings based on weights from a male and female sample. Elizur (1980) summarized the factor weight controversy by indicating that unless independent factors were used (which was not true of the CJET), little support could be found for the idea that factor weights biased job evaluation instruments.

The second problem was eliminated due to the fact that the CJET was developed, in part, to eliminate the factor selection problem. For example, three of the nontraditional scales were purposely included due to their bias in favor of female jobs. Furthermore, an internal bias analysis was completed by Doverspike (1983), in order to demonstrate the absence of these problems when using the instrument. When reliabilities were calculated, no sex bias was evidenced, based on rater reliability or internal consistency, for the overall instrument. The results also established that male and female jobs were properly differentiated, as a whole, and that factor structures within the instrument were in accordance with ones demonstrated in previous research.

The problem of biased job descriptions was addressed by Cohen (1949). A set of jobs was re-evaluated which included the rewriting of all existing job descriptions. The two committees of evaluators obtained a total scale reliability of $\underline{r} = .95$. These findings were comparable to previous total scale reliability figures. Arvey et al. (1977) also provided evidence on the issue of bias in job descriptions. A job analysis instrument, the PAQ, was used to develop job descriptions for jobs of both male and female incumbents. No significant sex stereotype influence was found. Christal, Madden, and Harding (1960) found that job description length had no effect on the ranking of job worth or the reliability of ratings. However, the jobs evaluated did effect reliability (Madden, 1960a, Madden, 1960b). If only high point level jobs were evaluated, for example, these jobs were underevaluated. If an unequal number of high and low point level

jobs were evaluated, ratings were either higher or lower than appropriate. The use of high or low point level jobs as anchors for rating other jobs was also reviewed. Jobs compared to high value anchors were rated lower and vice versa. In the present study, the point value problems were avoided due to the fact that an equal number of high and low point level jobs were used.

The most plausible explanation for superior ratings obtained for male jobs concerns the existence of bias within the evaluators themselves. Cooper (1981) suggests that job behaviors are subject to the halo effect which produces either low intercategory variance or high intercategory correlations. Job behaviors tend to require abilities which are relevant across factors in order to maintain sufficient peformance quality. These abilities, therefore, tend to be either the same or at least correlated with each other. Dunnette (1966, p. 69) exemplifies this idea when defining a job as a "relatively homogeneous cluster of work tasks." A problem arises because the more that raters perceive that categories covary with prior total impressions or salient features, specific category characteristics are overshadowed and the covariance across related categories increases. In other words, if raters entered the experimental situation with preconceived job stereotypes, the characteristics of the jobs which were not stereotyped were overshadowed by the total impression that male jobs should be rated higher than female jobs, thus, the covariance across the related category characteristics of rating male jobs higher increased.

This idea is further supported by research which indicates that jobs may be stereotyped due to the perceptions of the typical job incumbent. Sex stereotypes have been found to consist of both social role and occupational information (Deaux & Lewis, 1984; Eagly & Steffen, 1984). When actual job information is minimal, information which is consistent with previous stereotyped impressions may be used to evaluate job worth. In addition, if information about the job is readily available, but inconsistent with prior stereotyped impressions, evaluators may use their stereotypes instead of the nonconfirmatory information, to make evaluations. Therefore, if a higher value is placed on male stereotypes, female jobs may be devalued.

If evaluators are biased, lack of bias in the instruments will be useless. It is important to stress that jobs and factors should be rated independently as well as in terms of relevant task statements (Doverspike, 1983).

Another significant finding concerns the job point level (Hypothesis 2). Doverspike (1983) had expert evaluators rate the same four jobs and found them to be rated in the same proportions as in the present study. The ratings in this study, however, were inflated as compared to ratings in the Doverspike (1983) study. Several differences exist between expert and student raters which might help clarify this finding. The inflated ratings could have been due to practice effects in that evaluators rated 200 jobs in the Doverspike (1983) study and only 4 jobs in the present one. This apparent practice effect might also be due to prior knowledge of job evaluation techniques by the experts. Students with no prior experience were

used in the present study, therefore, no basis for job importance was established prior to the experimental situation. Expert raters would also have been trained more thoroughly as to the existence of rating errors such as halo and leniency. Thus, the ratings of student raters appeared inflated.

Past literature has reported mixed findings on the use of expert and student raters. Smith and Hakel (1979) indicated little difference existed between job incumbents, analysts, and supervisors and a comparison group of student evaluators in the analysis of jobs using the PAQ. These results indicated important differences between the five types of raters in one category; leniency, when using the rating scales. However, when further information was provided, these ratings which were lenient became the most accurate. The authors also suggested that expert and student raters had "shared stereotypes" concerning certain jobs, thus, producing a high level of agreement. These findings seem to coincide with the schema explanation as posited for Hypothesis 1 as well as lend some insight into the reason for the leniency errors. Further research suggested, however, that a problem existed with the method Smith and Hakel (1979) used to obtain convergent validity between expert and student raters (Cornelius, Denise, & Blencoe, 1984). Ratings from job experts and students were seen as unequivocable due to the fact that incumbent and student rater data did not meet additional criteria including equal means, standard deviations, and correlations with outside variables. In sum, no clear-cut distinction can be made as to the equivalence of expert and student ratings. Although some characteristics of the present study

and the Smith and Hakel (1979) study appear to be the same, further research is needed to make a clearer distinction.

In the analysis of Hypothesis 3, it was concluded that extreme ratings did not have more of an influence on consensus ratings than midrange ratings. Sackett and Wilson (1982) did find this to be the case with assessment center consensus ratings. There are several possible explanations for the discrepancy between these studies. First, Sackett and Wilson appeared to have a larger number of ratings in the extreme or at least closer to the extreme than the present study. Therefore, the extreme rating percentages were higher.

A second explanation concerns the method used to calculate the differences between midrange and extreme rating percentages. Conclusions were drawn based on simple observation of the existing rating patterns. In many instances, the differences between the extreme rating percentages and the midrange percentages were only 3 or 4 percentage points apart. Whether this is sufficient to draw the conclusions made is indefinite.

The third possible explanation comes from informational influence theory (Myers & Lamm, 1975). This theory suggests that when group discussion occurs, arguments are made which usually emphasize the initially favored alternative. Arguments center around points supporting the majority's initial preference. In the groups in the present study, the highest percentage of ratings went to those point levels which the majority of the group initially favored. Group members not in the majority could have learned from the discussion, facts supporting primarily the majority's initial preference, and thus

been influenced to vote with the majority. Although the actual job descriptions were available, only items which supported the majority's opinion would have been drawn from them while the disconfirming items may have been ignored.

The fourth hypothesis, concerning the use of the mechanical rule to obtain consensus ratings, suggests that consensus discussion may be necessary in job evaluation. Sackett and Wilson (1982) found the discussion process was not needed in the assessment center. This discrepancy may be due to the differences between assessment center and job evaluation ratings. The basic reason for the difference in the two studies was that a greater number of instances of total agreement occurred among the 4 assessment center raters. These raters appeared to have set criteria by which to rate the incumbents. In the job evaluation committee, individual evaluators may have seen each job as unique and rated according to the specific job descriptions for each job. This could have caused more disagreement among the evaluators due to discrepant individual interpretations of the job descriptions. Further research needs to be conducted in a field setting in order to draw confirmatory conclusions.

The effects of relative influence of the chairperson was investigated in several contexts in the present study. Hypotheses 5 and 6 examined the effects in terms of perceived power of the chairperson. According to Stogdill (1981), social power has been defined as the extent to which an individual influences others. In a power situation, the holder of the power has the supposed advantage. As noted by several studies on group dynamics (Shaw, 1976), the

chairperson can have a significant impact on the decision-making process, as well as the group decision outcomes. The group decision can be greatly influenced by the power and authority associated with his or her role (Maier & Hoffman, 1965). A situation involving social power implies exchange, influence, and interdependent behavior among group members. If no mutual obligation exists between group members and chairpersons, no true basis for the exercise of power exists. In the present study, the chairperson had no tangible factors which he/she could use in order to influence group members. Therefore, group members may not have perceived the chairperson as having more power and, thus, were not significantly influenced by him/her.

The chairperson also had no means of imposing any of the five types of power (French & Raven, 1959). Expert power was eliminated due to the fact that none of the subjects had had any experience with the job evaluation instrument. Referent power was also not possible in that group members were given no basis on which to establish respect for the chairperson in the experimental situation. Coercive power has already been discussed, generally, in that chairpersons were not given any obligatory penalties to impose. The same can be said for reward power. Legitimate power could have been exercised except for the fact that the appointment process used by the experimenter did not focus on conferring authority due to the unrealistic nature of this practice in actual job evaluation committees. The reliabilities for the group members' and the chairpersons' API ratings were high, $\alpha = .88$ and $\alpha = .83$, respectively. This indicates that the measure

was reliable, however, the group situation did not provide the appropriate stimuli for effects due to power to occur.

This hypothesis was proposed based on previous research which looked at the effects of holding the role of chairperson (Klimoski, Freidman, & Weldon, 1980; Schmitt, 1977). It appears that in the present study the chairperson was seen in an administrative-type position rather than a leadership role. This should be viewed as a positive result in that appropriately formed job evaluation committees should not be significantly effected by the power of the chairperson. Henderson (1982) suggests that the chairperson should serve the group and provide each member with the opportunity to participate in the meeting. Group discussion should be facilitated, not dominated, by his/her presence. The chairperson acts as a coordinator in that his/her duties include ensuring all committee members had adequate time and proper information in order to make decision. These activities are facilitative rather than authoritative, therefore, the fact that relative influence of the chairperson was not evidenced in the power measures is not surprising.

Exploratory Issue 1 was similar to Hypothesis 1 except the effects of sex of chairperson, job point level, and job stereotype on consensus ratings were assessed. As noted in the previous section, chairpersons can have a powerful impact on the outcomes of group decisions. Research in the area of leadership suggests that if both males and females are trained to accept socially different roles, the sex of the leader may affect their perceptions (Lord, Phillips, & Rush, 1980). Thus, the ideas concerning sex of leader and the impact

of the chairperson on group outcomes were combined in order to assess their effect on group processes. Results were identical to those obtained in Hypothesis 1, except that an interaction was obtained between sex of job and point level. An Omega squared was calculated for the interaction which fell within the low range of effect strength (Cohen, 1977). Simple effects were calculated, although the interpretations are somewhat suspect. Male jobs were rated higher than female jobs at each point level. Male jobs were rated even higher than female jobs at the higher levels than at the lower levels. It appears that when the jobs are in the category of professional or white collar-type positions, the distinction between the way males and females are rated becomes even greater. Therefore, women in professional positions are seen as being worth somewhat less than males at a comparable job level. Any further speculation as to the reason for this effect appears to be unnecessary because of the minimal amount of variance accounted for by the effect.

Another more important area of interest concerns the reasons sex of chairperson and sex of rater did not make a difference in consensus ratings (Exploratory Issue 2). A possible explanation may be found in the area of causal attribution and leadership perceptions. Calder (1977) suggests that group members have implicit beliefs about certain behaviors and effects which leadership has. Group members are apt to attribute leadership to an individual if they are the most likely explanation as to the reason an outcome occurred. Group members are not going to attribute any type of influence to a chairperson who does not appear to have any effect on the outcome of the discussion. As

previously stated in the discussion of Hypotheses 5 and 6, chairpersons were not given conditions which allowed them to emerge as leaders. Therefore, subjects in the chairperson position were not perceived in any type of power or leadership role, regardless of their sex.

The third exploratory issue identified the dimensions which raters disagreed on and the extent to which they disagreed. The use of the disagreement by 2 or more scale points rule was obtained from Sackett and Wilson (1982). These researchers agree that there could be a problem in defining what disagreement is. When agreement exists, this may be due to a clear understanding of the dimensions and accurate interpretation of the job descriptions. Agreement also may be due to a general understanding among individual raters as to the specific characteristics of the job which always deserve the same rating (any clerical job would always receive a lower rating for education). The raters in the present study appeared to have the most difficulty with dimensions which were not clearly defined in the job description. The dimension of financial responsibility accounted for the highest percentage of disagreement. In order to evaluate the dimension, raters had to use more of their own ideas about the characteristics of the job rather than specific statements in the job description. These findings suggest further research should be done on the amount of information provided to evaluators and the format in which it is presented. The job descriptions which were used required evaluators to select the most salient factors from a paragraph. If these factors were categorized, as in a job specification for example,

the disagreement on the more abstract dimensions may not have been as great.

The last two exploratory issues (4 and 5) concerned the effects of chairpersons' influence and initiating structure on consensus ratings. Several shortcomings of the LBDQ and LOQ, which were used to measure initiating structure, have been cited in the literature. Schreisheim and Kerr (1974) indicated that the scale contained items which obtained skewed responses and suffered from leniency. The scales of consideration and initiating structure were also found to be intercorrelated possibly indicating halo errors. The structure of the scales appeared to generate a tendency to agree, and response intervals produce only ordinal rather than interval data. Although these shortcomings exist, the scales tend to reduce correlations rather than inflate them, thereby diminishing the possibility of Type I errors. These measures are also considered more appropriate than scales which have no reliability and validity criteria available.

Therefore, one possible explanation for the lack of significant results in this area was the measures which were used. The reliability for the LBDQ was $\alpha = .86$, which was acceptable. However, the LOQ obtained an alpha of .71. Besides the fact that the chairperson was probably perceived in an administrative-type role, the measures for this hypothesis could also have contributed to the nonsignificant results.

In the present study, several conclusions can be drawn concerning job evaluation and the consensus judgment process.

1. Males and females did stereotype jobs in both individual and group consensus ratings which were most likely due to bias among the individual raters. Future research should be directed toward developing more effective training methods for evaluators so that this problem can be controlled.

2. The CJET instrument appeared to differentiate job point levels adequately across student raters. Actual comparisons of student versus expert ratings should be made in order to establish the instrument's effectiveness when used by both types of raters.

3. Extreme ratings did not have more influence on consensus ratings than midrange ratings. Rather, a "majority rule" hypothesis may have been used.

4. Significant correlations were obtained between the means of the individual and consensus ratings. Further analysis indicated, however, that consensus ratings were predicted from individual rating means in only 71.7% of the total rating instances. Therefore, the use of a mechanical rule in predicting job evaluation consensus ratings is questionable. Actual investigation in an organizational setting is necessary, however, before further conclusions are drawn.

5. The relative influence of the chairperson was not demonstrated in either the power or leadership variables. The chairperson role may have been perceived as administrative which is in accordance with the way the position is supposed to be perceived in the actual job evaluation committee. Whether the committees in the organization are formated in this way could be answered in future research.

6. The disagreement among dimensions occurred most for abstract factors which were not clearly defined in the job description. Future research should compare and contrast different formats of presentation for job evaluations (i.e., job specifications) in order to determine the most useful presentation form.

The last issue to be discussed concerns the amount of power provided by the sample. Some researchers might question if the effect of factors such as relative influence, leadership, and power, actually do not exist or does some flaw exist within the experimental procedure. Three reasons are suggested which substantially reduce the possibility of experimental error: (1) the number of subjects utilized allows for sufficient power within the design; (2) for each statistic used, the assumptions for the statistics were met; and (3) standardized experimental procedures were used which controlled for systematic error in the experimental procedure.

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Appendix A

The Job Descriptions

STEREO-PLOTTER OPERATOR

Is given aerial photographs and from these draws topographical maps. This is done by using instruments that produce simultaneous projections of two photographs taken from different positions. These instruments allow the two images to blend into one and give the effect of solidity and depth. Then, the planes and contours in the topography can be delineated. Orients plotting instruments to form three dimensional image. Views photographs with different types of magnifying techniques. Determines contours size and vertical scale of image, using mathematical table. Traces contours and topographical details to produce map.

DIRECTORY-ASSISTANCE OPERATOR

Provides telephone information from cord or cordless central office switchboard: Plugs in headphones when signal light flashes on cord switchboard, or pushes switch keys on cordless switchboard to make connections. Refers to alphabetical or geographical reels or directories to answer questions and suggests alternate locations and spelling under which number could be listed. May type location and spelling of name on computer terminal keyboard, and scan directory or microfilm viewer to locate number. May keep record of calls received. May keep reels and directories up to date.

MECHANICAL RESEARCH ENGINEER

Conducts research to develop mechanical equipment and machinery directed toward investigation, evaluation, and application of known engineering theories and principles. Plans and conducts, or directs engineering personnel performing, complex engineering experiments to test, prove, or modify theoretical propositions on basis of research findings and experiences of others researching in related technological areas. Evaluates findings to develop new concepts, products, equipment, or processes; or to develop applications of findings to new uses. Prepares technical reports for use by engineering or management personnel for long- and short-range planning, or for use by sales engineering personnel in sales or technical services activities.

WORD PROCESSING SUPERVISOR

Supervises and coordinates activities of workers engaged in preparing correspondence, records, reports, insurance policies, and similar clerical matter and in operating specialized typing machines, such as magnetic-tape typewriting and composing machines: Advises other departmental personnel in techniques and style of dictation and letter writing. Recommends changes in procedures to effect savings in time, labor, costs, and to improve operating efficiency. Assigns new workers to experienced workers for training. Assists subordinates in resolving problems in nonstandard situations. Evaluates job performance of subordinates and recommends appropriate personnel action.

Appendix B

The Rating Forms

CJET Rating Form

Social Security # _____

Job: Mechanical Research Engineer

Dimensions	Your Rating
1. Education	_____
2. Time to Proficiency	_____
3. Previous Experience	_____
4. Mental Effort	_____
5. Visual Attention	_____
6. Physical Effort	_____
7. Manual Dexterity	_____
8. Supervisory Responsibility	_____
9. Financial Responsibility	_____
10. Safety of Others	_____
11. Counseling and Teaching	_____
12. Negotiating and Influencing	_____
13. Surroundings	_____
14. Hazards	_____
15. Monotony	_____

CJET Rating Form

Social Security # _____

Job: Mechanical Research Engineer

Dimensions	Group Rating
1. Education	_____
2. Time to Proficiency	_____
3. Previous Experience	_____
4. Mental Effort	_____
5. Visual Attention	_____
6. Physical Effort	_____
7. Manual Dexterity	_____
8. Supervisory Responsibility	_____
9. Financial Responsibility	_____
10. Safety of Others	_____
11. Counseling and Teaching	_____
12. Negotiating and Influencing	_____
13. Surroundings	_____
14. Hazards	_____
15. Monotony	_____

CJET Rating Form

Social Security # _____

Job: Stereo-Plotter Operator

Dimensions	Your Rating
1. Education	_____
2. Time to Proficiency	_____
3. Previous Experience	_____
4. Mental Effort	_____
5. Visual Attention	_____
6. Physical Effort	_____
7. Manual Dexterity	_____
8. Supervisory Responsibility	_____
9. Financial Responsibility	_____
10. Safety of Others	_____
11. Counseling and Teaching	_____
12. Negotiating and Influencing	_____
13. Surroundings	_____
14. Hazards	_____
15. Monotony	_____

CJET Rating Form

Social Security # _____

Job: Stereo-Plotter Operator

Dimensions	Group Rating
1. Education	_____
2. Time to Proficiency	_____
3. Previous Experience	_____
4. Mental Effort	_____
5. Visual Attention	_____
6. Physical Effort	_____
7. Manual Dexterity	_____
8. Supervisory Responsibility	_____
9. Financial Responsibility	_____
10. Safety of Others	_____
11. Counseling and Teaching	_____
12. Negotiating and Influencing	_____
13. Surroundings	_____
14. Hazards	_____
15. Monotony	_____

CJET Rating Form

Social Security # _____

Job: Word Processing Supervisor

Dimensions	Your Rating
1. Education	_____
2. Time to Proficiency	_____
3. Previous Experience	_____
4. Mental Effort	_____
5. Visual Attention	_____
6. Physical Effort	_____
7. Manual Dexterity	_____
8. Supervisory Responsibility	_____
9. Financial Responsibility	_____
10. Safety of Others	_____
11. Counseling and Teaching	_____
12. Negotiating and Influencing	_____
13. Surroundings	_____
14. Hazards	_____
15. Monotony	_____

CJET Rating Form

Social Security # _____

Job: Word Processing Supervisor

Dimensions	Group Rating
1. Education	_____
2. Time to Proficiency	_____
3. Previous Experience	_____
4. Mental Effort	_____
5. Visual Attention	_____
6. Physical Effort	_____
7. Manual Dexterity	_____
8. Supervisory Responsibility	_____
9. Financial Responsibility	_____
10. Safety of Others	_____
11. Counseling and Teaching	_____
12. Negotiating and Influencing	_____
13. Surroundings	_____
14. Hazards	_____
15. Monotony	_____

CJET Rating Form

Social Security # _____

Job: Directory-Assistance Operator

Dimensions	Your Rating
1. Education	_____
2. Time to Proficiency	_____
3. Previous Experience	_____
4. Mental Effort	_____
5. Visual Attention	_____
6. Physical Effort	_____
7. Manual Dexterity	_____
8. Supervisory Responsibility	_____
9. Financial Responsibility	_____
10. Safety of Others	_____
11. Counseling and Teaching	_____
12. Negotiating and Influencing	_____
13. Surroundings	_____
14. Hazards	_____
15. Monotony	_____

CJET Rating Form

Social Security # _____

Job: Directory-Assistance Operator

Dimensions	Group Rating
1. Education	_____
2. Time to Proficiency	_____
3. Previous Experience	_____
4. Mental Effort	_____
5. Visual Attention	_____
6. Physical Effort	_____
7. Manual Dexterity	_____
8. Supervisory Responsibility	_____
9. Financial Responsibility	_____
10. Safety of Others	_____
11. Counseling and Teaching	_____
12. Negotiating and Influencing	_____
13. Surroundings	_____
14. Hazards	_____
15. Monotony	_____

Appendix C

The Leadership Questionnaires

Leadership Questionnaire

Group Member

The following phrases describe qualities the chairperson of your group might possess. Please indicate the degree to which you feel your group's chairperson possessed these qualities. Remember that your responses will be kept confidential. For the chairperson of your group, please circle the most appropriate point value for each phrase. Also indicate your chairperson's name and social security number and your name and social security number in the blanks provided below.

Name of Chairperson _____

His/Her Social Security # _____

Your Name _____

Your Social Security # _____

	Always	Often	Occasionally	Seldom	Never
1. Lets group members know what is expected of them	5	4	3	2	1
2. Is friendly and approachable	5	4	3	2	1
3. Encourages the use of uniform procedures	5	4	3	2	1
4. Does little things to make it pleasant to be a member of the group	5	4	3	2	1
5. Tries out his or her ideas in the group	5	4	3	2	1
6. Puts suggestions made by the group into operation	5	4	3	2	1
7. Makes his or her attitudes clear to the group	5	4	3	2	1
8. Treats all group members as his or her equals	5	4	3	2	1

		Always	Often	Occasionally	Seldom	Never
9.	Decides what shall be done and how it will be done	5	4	3	2	1
10.	Assigns group members to particular tasks	5	4	3	2	1
11.	Keeps to himself or herself	5	4	3	2	1
12.	Makes sure that his or her part in the group is understood by the group members	5	4	3	2	1
13.	Looks out for the personal welfare of group members	5	4	3	2	1
14.	Schedules the work to be done	5	4	3	2	1
15.	Is willing to make changes	5	4	3	2	1
16.	Maintains definite standards of performance	5	4	3	2	1
17.	Refuses to explain his or her actions	5	4	3	2	1
18.	Asks that group members follow standard rules and regulations	5	4	3	2	1
19.	Acts without consulting the group	5	4	3	2	1

		None		A moderate amount		An extreme amount
20.	How much leadership was exhibited by the chairperson of your group?	5	4	3	2	1

Leadership Questionnaire

Chairperson

For each item, choose the alternative which most nearly expresses your opinion on how frequently you, as chairperson, should do what is described by that item. Always indicate what you, as chairperson, sincerely believe to be the desirable way to act. Circle the most appropriate value for each phrase. Also indicate your name and social security number in the blanks provided below.

Attention: Please be sure to take note of the changes in the meanings of the scale values.

Name _____

Social Security # _____

		Always	Often	Occasionally	Seldom	Never
1.	Refuse to compromise a point	4	3	2	1	0
2.	Speak in a manner not to be questioned	4	3	2	1	0
3.	Stand up for those in the work group under you, even though it makes you unpopular with others	4	3	2	1	0
4.	Insist that everything be done your way	4	3	2	1	0
5.	Reject suggestions for change	4	3	2	1	0
6.	Back up what people under you do	4	3	2	1	0
7.	Be slow to accept new ideas	4	3	2	1	0
8.	Treat all people in the work group as your equal	4	3	2	1	0
9.	Criticize a specific act rather than a particular member of the work group	4	3	2	1	0

		Always	Often	Occasion-ally	Seldom	Never
10.	Be willing to make changes	4	3	2	1	0
11.	Put suggestions made by people in the work group into operation	4	3	2	1	0
12.	Get the approval of the work group on important matters before going ahead	4	3	2	1	0
13.	Rule with an iron hand	4	3	2	1	0
14.	Criticize poor work	4	3	2	1	0
15.	Wait for people in the work group to push new ideas	4	3	2	1	0
16.	Assign people in the work group to particular tasks	4	3	2	1	0
17.	Ask that people under you follow to the letter those standard routines handed down to you	4	3	2	1	0
18.	Let others do their work the way they think best	4	3	2	1	0
19.	Decide in detail what shall be done and how it shall be done by the work group	4	3	2	1	0
20.	See to it that people in the work group are working up to capacity	4	3	2	1	0

		Often	Fairly Often	Occasion-ally	Once in a While	Very Seldom
21.	Refuse to explain your actions	4	3	2	1	0
22.	Act without consulting the work group	4	3	2	1	0

		Often	Fairly Often	Occasionally	Once in a While	Very Seldom
23.	Give in to others in discussions with your work group	4	3	2	1	0
24.	Try out your own ideas in the work group	4	3	2	1	0
25.	Encourage slow-working people in the work group to work harder	4	3	2	1	0
26.	Offer new approaches to problems	4	3	2	1	0

		A Great Deal	Fairly Much	To Some Degree	Comparatively Little	Not at All
27.	Resist changes in ways of doing things	4	3	2	1	0
28.	Talk about how much should be done	4	3	2	1	0
29.	"Needle" people in the work group for greater effort	4	3	2	1	0
30.	Emphasize meeting of deadlines	4	3	2	1	0

		None		A Moderate Amount				An Extreme Amount
31.	How much leadership was exhibited by you as the chairperson of the group?	1	2	3	4	5	6	7

Appendix D

The Power Questionnaires

Power Questionnaire

Group Member

The following adjectives or phrases identify qualities of the chairperson in your group, actions he/she may take, or your personal feelings toward him/her. Please indicate how accurate these adjectives or phrases are in describing the chairperson of your group. Remember that your responses will be kept confidential. For the chairperson of your group, please circle the most appropriate abbreviation and indicate his/her name and social security number. Also include your name and social security number in the blanks provided below.

Name of Chairperson _____

His/Her Social Security # _____

Your Name _____

Your Social Security # _____

EI - Extremely inaccurate
VI - Very inaccurate
I - Inaccurate
? - Don't know or can't decide
A - Accurate
VA - Very Accurate
EA - Extremely Accurate

1.	Admire him/her	EI	VI	I	?	A	VA	EA
2.	Gives credit where credit is due . .	EI	VI	I	?	A	VA	EA
3.	Rules by might	EI	VI	I	?	A	VA	EA
4.	Skilled	EI	VI	I	?	A	VA	EA
5.	Knowledgeable	EI	VI	I	?	A	VA	EA
6.	Identify with him/her	EI	VI	I	?	A	VA	EA
7.	Have an obligation to accept his/her orders	EI	VI	I	?	A	VA	EA
8.	Experienced	EI	VI	I	?	A	VA	EA

EI - Extremely inaccurate
VI - Very inaccurate
I - Inaccurate
? - Don't know or can't decide
A - Accurate
VA - Very Accurate
EA - Extremely Accurate

9.	Respect him/her as a person	EI	VI	I	?	A	VA	EA
10.	Proficient	EI	VI	I	?	A	VA	EA
11.	Retaliative	EI	VI	I	?	A	VA	EA
12.	Recognizes achievement	EI	VI	I	?	A	VA	EA
13.	Willing to promote others	EI	VI	I	?	A	VA	EA
14.	Duty bound to obey him/her	EI	VI	I	?	A	VA	EA
15.	Has authority	EI	VI	I	?	A	VA	EA
16.	Rewards good work	EI	VI	I	?	A	VA	EA
17.	Overly critical	EI	VI	I	?	A	VA	EA
18.	Friendly	EI	VI	I	?	A	VA	EA
19.	Entitled to direct my actions . . .	EI	VI	I	?	A	VA	EA
20.	Authorized to command	EI	VI	I	?	A	VA	EA
21.	Disciplinarian	EI	VI	I	?	A	VA	EA
22.	Qualified	EI	VI	I	?	A	VA	EA
23.	Offers inducements	EI	VI	I	?	A	VA	EA
24.	Strict	EI	VI	I	?	A	VA	EA
25.	Likeable	EI	VI	I	?	A	VA	EA

Power Questionnaire

Chairperson

The following adjectives or phrases identify qualities of yourself, as chairperson of your group, actions you might take, or your personal feelings about your role as chairperson. Please indicate how accurate these adjectives or phrases are in describing yourself as chairperson. Remember that your responses will be kept confidential. Please circle the most appropriate abbreviation and indicate your name and social security number.

Name _____

Social Security # _____

EI - Extremely inaccurate
VI - Very inaccurate
I - Inaccurate
? - Don't know or can't decide
A - Accurate
VA - Very Accurate
EA - Extremely Accurate

1.	Admired	EI	VI	I	?	A	VA	EA
2.	Give credit where credit is due . .	EI	VI	I	?	A	VA	EA
3.	Rule by might	EI	VI	I	?	A	VA	EA
4.	Skilled	EI	VI	I	?	A	VA	EA
5.	Knowledgeable	EI	VI	I	?	A	VA	EA
6.	Am identified with	EI	VI	I	?	A	VA	EA
7.	Other group members are obligated to accept my orders	EI	VI	I	?	A	VA	EA
8.	Experienced	EI	VI	I	?	A	VA	EA
9.	Respected as a person	EI	VI	I	?	A	VA	EA
10.	Proficient	EI	VI	I	?	A	VA	EA
11.	Retaliative	EI	VI	I	?	A	VA	EA

EI - Extremely inaccurate
VI - Very inaccurate
I - Inaccurate
? - Don't know or can't decide
A - Accurate
VA - Very Accurate
EA - Extremely Accurate

12.	Recognize achievement	EI	VI	I	?	A	VA	EA
13.	Willing to promote others	EI	VI	I	?	A	VA	EA
14.	Other group members are duty bound to obey me	EI	VI	I	?	A	VA	EA
15.	Have authority	EI	VI	I	?	A	VA	EA
16.	Reward good work	EI	VI	I	?	A	VA	EA
17.	Overly critical	EI	VI	I	?	A	VA	EA
18.	Friendly	EI	VI	I	?	A	VA	EA
19.	Entitled to direct other group member's actions	EI	VI	I	?	A	VA	EA
20.	Authorized to command	EI	VI	I	?	A	VA	EA
21.	Disciplinarian	EI	VI	I	?	A	VA	EA
22.	Qualified	EI	VI	I	?	A	VA	EA
23.	Offer inducements	EI	VI	I	?	A	VA	EA
24.	Strict	EI	VI	I	?	A	VA	EA
25.	Likeable	EI	VI	I	?	A	VA	EA

Appendix E

Functional Leadership Behavior Questionnaire

SS# _____

FLB Questionnaire

Considering the four group members, including yourself, who would you rate the highest on the following dimensions. Write that person's assigned letter in the space provided after the dimensions listed below. You may use each person's letter as many times as you feel is appropriate.

Dimensions

1. Developing Orientation and Defining Problems _____
2. Facilitating Information Exchange _____
3. Facilitating Evaluation and Analysis _____
4. Developing Plans _____
5. Proposing Solutions _____
6. Initiating Behavior _____
7. Coordinating or Directing Behavior _____
8. Removing Barriers or Providing Resources _____
9. Enhancing Task Motivation _____
10. Fulfilling Nontask Needs _____
11. Reducing or Avoiding Conflict _____
12. Developing a Positive Group Atmosphere _____

Appendix F

Job Stereotype Questionnaire

SS# _____

MC Questionnaire

Place an "X" in the blank which BEST reflects your answer to the following questions.

MRE = Mechanical Research Engineer
SPO = Stereo-Plotter Operator
DAO = Directory-Assistance Operator
WPS = Word Processing Supervisor

1. What percentage of the workers in the jobs you have just read about are male as opposed to female?

	MRE	SPO	DAO	WPS
0-20%	_____	_____	_____	_____
21-40%	_____	_____	_____	_____
61-80%	_____	_____	_____	_____
81-100%	_____	_____	_____	_____

2. To what extent is the job typically male or female?

	Extremely Female	Moderately Female	Neutral	Moderately Male	Extremely Male
	1	2	3	4	5
MRE	_____	_____	_____	_____	_____
SPO	_____	_____	_____	_____	_____
DAO	_____	_____	_____	_____	_____
WPS	_____	_____	_____	_____	_____

Appendix G

The CJET Training Manual

A Rater Training Manual to Accompany the Comprehensive Job Evaluation Technique

Dennis Doverspike
Psychology Department
The University of Akron

Preface

This manual is designed to aid in the standardization of job evaluation ratings for the author's doctoral dissertation. The material contained in this manual is intended to foster the development of a similar frame of reference among the raters. The manual, therefore, does not include discussion of other issues relevant to the establishment and maintenance of a job evaluation system or a wage and salary administrative policy. Its primary function is simply to ensure an adequate understanding of both the job evaluation instrument and the process of rating jobs.

Chapter 1

Introduction to Job Evaluation

Employees of an organization expect to receive pay which is adequate and equitable in return for the skill and training required, the effort expended, the responsibility exercised, and the hazardous conditions encountered on their jobs. Employees expect that their pay will be equitable in comparison to other jobs in the organization and to other jobs in other organizations. If an organization wishes to retain its employees, then the organization must establish pay policies which encourage the development of perceptions of pay equity.

Early History

Until early in this century, organizations were forced to rely on fiat or bargaining to establish rates of pay for jobs. However, periods of rapidly rising and declining prices caused by wars, technological advances, and government legislation, as well as the growing role of unions, led to increased dissatisfaction with traditional methods of determining pay. The problem faced by organizations was how to ensure equitable rates of pay under rapidly changing economic conditions.

The work of Frederick W. Taylor provided one solution. Taylor demonstrated in the late 1800s that it was possible to scientifically investigate the properties of jobs. At about the same time, others, including the United States Civil Service Commission, were developing primitive methods of job evaluation and job classification. The

purpose of these new methods was to arrive at rational orderings of jobs in terms of worth to the organization.

A number of methods for ordering jobs according to worth were soon developed. The earliest methods involved simple rankings of jobs and groupings into common grades. Later methods were developed which required rating or ranking jobs on factors. These factors were scales which were developed to reflect work characteristics which were perceived as compensable. Thus, different job evaluation types developed. These types are discussed in the next chapter.

Major Characteristics

Modern job evaluation systems consist of a number of elements. These elements may include: a job analysis, determination of job classes, a wage survey, a rate structure, a merit pay system, an incentive pay system, and the job evaluation instrument. Thus, the job evaluation instrument is but one part, albeit a very crucial part, of the total job evaluation system.

The purpose of the job evaluation instrument is to differentiate jobs based on the internal compensable characteristics of the job. Thus, by definition, job evaluation does not measure important job characteristics which are not compensable nor compensable characteristics which are not internal to the job. This explains why job evaluation instruments do not measure factors such as union membership and short-term labor supply, which, while compensable, are not internal to the job.

The factors which have been found consistently to be both compensable and internal are: skill, effort, responsibility, and

working conditions. These factors are defined in terms of the job, not the person holding the job. For example: a company may hire all college graduates to perform entry-level clerical jobs requiring a high school education. The job worth is based on the required high school diploma not the college diploma actually held by the incumbents. The possession of a college diploma may increase both performance and pay on the job, but it is not required by the job. Therefore, the extra education of the incumbent does not affect the job worth as measured by the job evaluation instrument, even though it may affect pay through performance bonuses.

Summary

In summary, job evaluation systems developed in response to pay inequities caused by rapidly changing economic conditions. The job evaluation instrument is one part of the job evaluation system. Job evaluation instruments measure job worth where job worth is defined in terms of the internal compensable characteristics of work. The major compensable characteristics are: skill, effort, responsibility, and working conditions. Four major types of job evaluation have been developed and are discussed in the next chapter.

Chapter 2

Methods of Job Evaluation

The four major types of job evaluation are: ranking, classification, factor comparison, and the point method. Both ranking and factor comparison involve comparing jobs to each other, while in the point and classification methods jobs are compared to a predetermined standard. The ranking and classification methods are similar in that the whole job is the subject of comparison, while the factor comparison and point methods are similar in that the job factors are the subject of comparison. The four methods will now be discussed in more detail.

Ranking

Ranking was one of the earliest methods of job evaluation. In the ranking method jobs are evaluated by comparison to each other based on overall worth. The raters are usually informed that judgments of overall worth are to be based on consideration of skill, effort, responsibility, and working conditions, but the judgments are still based on assessment of the whole job. Usually, the raters are asked to simply rank the jobs, although more complicated methods, such as paired comparison, do exist.

The main advantage of the ranking method is its simplicity. However, this advantage diminishes as the number of jobs to be ranked increases. The ranking method has a number of additional disadvantages including its arbitrary nature, difficulties in applying the method to a large number of jobs, and problems in evaluating new jobs.

Classification

A second simple method of job evaluation is the classification method. In using this method, the first step is the development of a number of grades or categories. For each grade there is a description of typical factor levels and a listing of representative jobs. Each job is compared to the grade description, based on its overall worth, and assigned to the grade category which provides the closest match. A good example of a classification system is the United States Civil Service System.

A major advantage of the classification method is that it is rather simple to develop and apply. A major difficulty is that jobs may have characteristics congruent with more than one grade. Thus, jobs may not fit well into the coding scheme. Therefore, this method may require arbitrary decisions regarding classification.

Factor Comparison

This method is based on ranking jobs on individual factors. In addition, the concept of job pricing is also part of this method. These two concepts, ranking on factors and pricing, are the major characteristics of the original factor comparison methods.

As with point systems, to be discussed in detail next, a number of characteristics or factors are thought to underlie the worth of jobs. The number of factors on which the job is evaluated is usually smaller than the number used in point systems. Frequently, there are three to five factors. For example, a factor comparison instrument might consist of the following five scales: skill, responsibility, physical effort, mental effort, and working conditions. Another

frequently used factor comparison method consists of four scales: know-how, problem solving, accountability, and working conditions. Thus, the first step consists of the identification of the factors.

After the identification of the factors, all the jobs are ranked on the factors. If there are five factors, then the jobs are ranked five times. Once the jobs are ranked a number of "key jobs," usually 10 to 20 are identified. Among the characteristics of a key job are that it is well-established, it is regarded as fairly paid, and it is fairly stable over time. In addition, key jobs should be selected so as to cover the entire range of possible factor values. These key jobs are then once again ranked on the factors.

Once the key jobs are ranked they are then priced. The total pay for a job is broken down into the pay for each factor. For example, a janitor is paid $4 per hour. This $4 is broken down into $.20 for skill, or about 5%; $.20 for responsibility, or 5%; $1.60 for physical effort, or 40%; and $1.80 for working conditions, or 45%. This procedure is followed for each key job. Thus, the pay for each factor for each key job is established. Key jobs are then compared to ensure that the monetary values are reasonable. For example, if a manager ranks higher than a janitor on skill, then the manager should receive more than $.20 for skill.

If the system is found to be internally consistent it is then applied to all the jobs. Jobs with skill requirements equivalent to janitors are allocated $.20 for skill. Rates of pay for other factors depend on how the requirements of the job match up with the key jobs.

The factors are then added together to arrive at the rate of pay for the job.

The major advantage of the factor comparison method is that the value of the job is expressed directly in monetary terms. There is no need to translate the measure of worth into pay. However, there are a number of disadvantages to the factor comparison method. The system is complex and must be professionally tailored to each organization. Furthermore, both the selection of key jobs and the ranking method introduce a good deal of subjectivity, more than that usually found in point methods, into the system. Finally, with recent concerns over comparable worth of male and female jobs, the identification of any job as properly paid may be highly controversial.

The preceding description of a factor comparison method describes the technique as originally developed. However, contemporary factor comparison methods often represent hybrids of factor comparison and point systems. These revisions attempt to resolve some of the problems with factor comparison methods.

Point Methods

Point methods or point plans are probably the most widely used job evaluation technique. The concept behind the point method is simple; jobs can be broken down into a number of compensable factors. However, unlike the factor comparison method, in the point method jobs are rated directly on the factors. For an example of a point method job evaluation instrument, see Addendum A.

In using the point method, then, a number of factors are chosen. The number of factors can range from 1 to 40. Traditionally, there

have been four major factors. These are: skill, effort, responsibility, and job conditions. These factors are then further divided into more specific factors. For skill, representative factors include education, experience, ability, and initiative. For effort, representative factors include mental effort and physical effort. For responsibility, representative factors include supervisory responsibility, financial responsibility, and responsibility for the safety of others. For job conditions, representative factors include working conditions, hazards, and location.

After the specific factors are chosen, they are further divided into levels or degrees. For example, for education one degree might be "requires a high school education." Another degree for education might be "requires a college education" (see Addendum A). These degrees are then assigned points. The points may increase in a simple arithmetic progression or in a more complex geometric progression.

Thus, a point method job evaluation instrument consists of a number of factors defined in terms of a number of degrees with corresponding point values. Each job is rated on each of the factors. The worth of the job is the total point score for the job. These point values are then translated into a pay structure.

Obviously the total point value will depend on the weights given to the factors. There are two major methods of arriving at factor weights. First, a committee may rate the importance of factors. Second, the weight may be determined through how well the factors predict pay. This requires the use of statistical techniques, in particular multiple regression. Regardless of the method used to

determine weights, the impact of each factor on the distribution of total point scores depends on the range of factor values actually obtained and on the reliability of the factors.

As previously indicated, the point method is perhaps the most popular job evaluation method. There are a number of excellent reasons for its popularity. Ratings made by the point method are reliable and valid. Jobs are evaluated independent of economic trends, changing wage rates, and market values. Finally, the method is easily understood and easily adapted to new situations. There are, however, criticisms of point methods. A major criticism is that similar results can be achieved with much simpler systems. Another criticism is that like any other method of job evaluation the point method is basically subjective.

Summary

There are four major methods of job evaluation: ranking, classification, factor comparison, and the point method. Ranking involves global relative comparisons of the whole job. Classification involves matching whole jobs to grade descriptions. Factor comparison involves the ranking of jobs on factors. The point method involves rating jobs on factors. Of the four methods of job evaluation, the point method is the most popular. In addition, there are a number of advantages to the point method compared to other methods. Foremost, the point method is relatively objective and is also independent of market values. The next chapter describes the basis of job evaluation--the job analysis.

Chapter 3

Job Analysis

Accurate job evaluations depend upon the availability of accurate, detailed job information. Job information is collected through a personnel function referred to as job analysis. In addition to forming the basis of job evaluations, job analysis serves as a source of information for performance appraisal, employee selection, and training.

Job analysis is a cyclic, iterative process involving the continual collection and updating of job information. There are two major steps in the job analysis process. The first step involves collecting the job information. This step involves defining the appropriate level of specificity in terms of jobs and tasks and deciding upon the method of data collection. The second stage involves organizing the collected information in a usable manner. This step involves writing the job description and job specification.

Defining Jobs

A job is an abstract concept. It is an abstract concept in that it represents a collection of physical and mental activities performed by a number of different individuals. Thus, what activities are considered to be part of a job is somewhat arbitrary. A major problem in job analysis is at what level of specificity to write the job analysis. In preparing a job analysis, it is useful to distinguish between elements, tasks, duties, positions, jobs, and occupations.

The "element" is the most specific work activity. The study of elements is usually the subject matter of time study analysis rather than job analysis. An element is the smallest step into which a work activity can be divided, without considering the separate movements made. An "elemental motion" is sometimes distinguished from an element, where the elemental motion is the very specific movements made in performing the job.

A "task" consists of one or more elements. It is a distinct, discrete unit of work. A task occurs whenever effort, mental or physical, is exerted to achieve a goal. Tasks are the proper subject matter of job analysis. A task statement usually consists of a specific action verb and a specific object. An example of a task is "reads job evaluation training manuals." Task statements are discussed in more detail under Job Specifications.

A "duty" is very similar to a task. Duties are defined as major tasks or major activities consisting of several tasks. For example, for a secretary a major duty is "types manuscripts."

A "position" is a collection of duties or tasks. The total collection of activities performed by an individual is a position. The number of positions in the country is equal to or greater than the number of workers in the country. This is because some workers may hold more than one position. In addition, some positions may be temporarily vacant. However, there is at least one position for every worker.

A "job" is a group of positions where the positions are judged to be sufficiently similar in their major tasks to be grouped together. A job may consist of one or more position.

An "occupation" is a general class of jobs. The significant attribute of an occupation, as compared to a job, is that an occupation crosses organizational lines. Thus, "secretary" is an occupation if there is no reference to where the secretarial activities are performed.

In job analysis, the concern is with describing jobs, although occupational analyses are also a possibility. The jobs are described in terms of the tasks and duties performed. The collection of the task information can be completed through a number of methods. These methods are described in the next section.

Methods

There are a number of options available in collecting job analysis information. Options include the technique to be used and from whom the information will be obtained.

Popular methods of collecting job information include the interview, observation, and questionnaires. Questionnaires provide a quick, standardized method of job analysis. However, the most popular technique of job analysis is probably the interview. The interview usually is conducted according to a standardized form. Use of the interview method allows the job analyst to vary the specificity of questions. Thus, the interview can clarify questions which are ambiguous in the questionnaire method. An important issue, regardless of method used, is who should provide the job information.

Job analysis information may be provided by a number of sources including the incumbent, the analyst, and the supervisor. The use of the incumbent as the source of job information has some disadvantages

for job evaluation. In particular, the incumbent may exaggerate the complexity of jobs, so as to increase the pay level of the job. The quality of the supervisor's evaluation will depend on his or her opportunity to observe the job activity. In practice, both the supervisor and the incumbent usually serve as sources of job information.

Once the job information is collected, it must be converted into useful form. Fairly standard procedures have been developed for translating job analysis information into standard form. The written job analysis usually consists of two major parts, the job description and the job specification.

Job Description

The job description consists of a listing of those tasks which constitute the job. Thus, the job description consists of a section detailing major duties and a section detailing all the tasks performed. The job description may also contain information on working conditions, tools used, the relationships to other jobs. (For sample job descriptions, see Addendum B and Addendum C.)

A standard format is available for writing job descriptions. First, the tasks are usually organized according to either relationships to major duties or temporal sequences. If neither of the above apply to the job tasks, then the tasks are organized according to importance.

There is also a standard sentence structure for describing the tasks. Sentences are kept simple. The subject is often omitted. The

framework for the sentences is verb and then immediate object. The object may be followed by an infinitive phrase.

For example, a task statement for a receptionist might be "answers telephone to take messages." The verb "answers" identifies the worker function. The immediate object "telephone" identifies the data, person, or thing which is the object of the work activity. Finally, the infinitive phrase is "to take messages." The infinitive phrase in this case modifies the object; the infinitive phrase may also identify the work field.

As illustrated in Addendums B and C, a job description may be very detailed or very brief depending on the complexity of the job being evaluated. Regardless of the complexity of the job, the general format for the job description is the same. Careful preparation of the job description is critical to the next phase of the job analysis, for the job description provides the basic data for the job specification.

Job Specification

The job specification gives the personal requirements or personal demands of the job. The job specification may include information on skill, effort, and responsibility required by the job, as well as the working conditions encountered on the job. The correspondence between the information provided by the job specification and the information required by the job evaluation should be obvious. The job specification provides the basic information for the job evaluation.

As with the collection of the job analysis information, job specifications may be developed through a number of methods. A simple method is to have the supervisor state the job requirements.

However, the supervisor may often over-estimate the job requirements. A second method is to have the job analyst revise the supervisor's or incumbent's estimates of the job requirements. A third method is to have the job analyst develop the job requirements through consideration of the job description and the analyst's knowledge of general occupational information. Regardless of the method used to generate the job specifications, they should be logically consistent with the job descriptions. It should be possible to identify the relevant task statements for each job requirement.

Summary

Job analysis provides the source of task information for the job evaluation. The two major steps in job analysis are collecting the job information and organizing task information into a usable form. The first step involves deciding on a method for collecting job information and deciding on who will provide the information. The second step consists of writing the job description and job specification. The job description and job specification should be internally consistent. The job specification provides the basic data for the job evaluation.

Chapter 4

Rating Errors

Research studies suggest that knowledge of rating errors may eliminate frequently made rating errors. Rating errors have been suggested as a possible source of the high intercorrelations obtained for job evaluation scales. Therefore, this chapter consists of a review of common rating errors. These errors include: leniency, halo, first impression, and contrast effects.

Leniency

Leniency, along with strictness and central tendency, involves the tendency to use only a part of the total rating scale. For example, in rating jobs an analyst rates all jobs toward the upper end of the scale, regardless of their actual value. This is a leniency error, since the jobs actually vary widely in their scale values. Similarly, a rater could use primarily the center value on a scale--central tendency--or the lower end of the scale--strictness. In practice, leniency errors are far less likely to occur in job evaluation than in performance appraisal.

Halo

Halo refers to the tendency to generalize inappropriately from one job factor to another job factor. Thus, it involves rating one factor too high, or too low, because another factor is rated high or low. It would be an example of halo error to rate a job high on previous experience merely because education was rated high. Of the various rating errors, halo may be the most critical in job evaluation

ratings. To reduce halo error, consider the factor definitions and level definitions carefully and attempt to rate each factor as independently as possible.

First Impression Error

If in rating a job an analyst allows initial information to distort subsequent information, then the analyst is making a first impression error. For example, an analyst might allow the job title to determine job requirements rather than the task descriptions. In job evaluation, this error can be avoided by carefully considering the entire job description.

Contrast Effects

Contrast effects refers to errors made when a job is compared to other jobs. For example, an analyst might rate a simple job lower if he or she had just finished rating two very complex jobs. Thus, the job is devalued because it was compared to other jobs. Contrast effects can be reduced by carefully reading each job description and each factor description.

Suggestions

Some suggestions for reducing rating errors are as follows:

1. Read each job description carefully and completely.
2. Read each job evaluation factor carefully and completely.
3. Rate each job as independently as possible.
4. Rate each factor as independently as possible.
5. Rate each factor in terms of relevant task statements.

In addition, it is important to note that not all leniency, halo, first impression effects, or contrast effects are errors. By their nature, job evaluation scales should be correlated. Furthermore, contrast effects provide useful information. Differences between jobs should be reflected in factor differences and raters may use jobs to help define numeric scale values. Thus, concern with rating errors should not overshadow the use of valid job information.

Summary

Rating errors may affect the validity of job evaluations. Common rating errors include leniency, halo, first impression, and contrast effects. Rating errors in job evaluation may be reduced by reading job and factor descriptions completely and carefully, rating jobs and factors independently, and tying job evaluation ratings to task statements. However, a concern with rating errors should not blind the rater to valid job information.

Chapter 5

Comprehensive Job Evaluation Technique

The job evaluation instrument you will be using to rate jobs is the Comprehensive Job Evaluation Technique (CJET; see Addendum A). The CJET is of the point method type of job evaluation. It consists of 15 scales. These 15 scales will now be discussed in detail.

Education

This factor measures the minimum educational level required by the job. The minimum educational level is defined as that level of education which an individual must possess prior to entry into a job in order to become proficient at the job duties within a reasonable time period. In evaluating this factor consider what is the basic knowledge required by the job, where this knowledge can be obtained, and whether specific education or specialized training is needed. In evaluating the minimum educational level it may also be useful to consider the scales for General Educational Development by the United States Employment Service which appear in Addendum D. For specific changes by level see the Education Table in Addendum E.

Time to Proficiency

This factor measures the average time required for an individual to reach proficiency in the job duties, given that the individual is minimally qualified for the job. Thus, take into consideration the education and previous experience required by the job. In rating this factor consider the level of proficiency required by the job, length of work cycles, amount of specific knowledge of the company or company

techniques required, and both on-the-job and orientation training. For specific changes by level see the Time to Proficiency Table in Addendum E.

Previous Experience

This factor measures the minimum amount of time an individual must have spent working at a related function, given the required level of minimum education, prior to entry into the job so as to become proficient at the job duties within a reasonable time period. In evaluating this scale consider normal career paths and time to proficiency requirements for earlier jobs. For example, a supervisor's job will normally require experience at least equivalent to the time required to become proficient at the subordinate's job. For specific changes by level see the Previous Experience Table in Addendum E.

Mental Effort

This scale measures the degree to which the position requires unusual mental effort, mental strain, or mental stress due to workload, deadlines, or the strain of interpersonal relationships. This factor should not be confused with the education or other abilities required by the job nor should it be confused with visual attention and responsibility. This characteristic is defined by the pace of work, detail involved, distractions involved, and emotional stresses involved. For specific changes by level see the Mental Effort Table in Addendum E.

In rating mental effort, the term "occasional" implies that the related task occurs infrequently; the task takes up less than 10% of

the total work time. "Frequently" implies that the task occurs in almost every work cycle or involves a major portion, over 10%, of the incumbent's time. "Constant" implies that the related task is a major work activity, occurs in every work cycle, or involves over 80% of the incumbent's time.

Visual Effort

This factor measures the degree of visual strain. It involves the duration, intensity, and relief from visual strain. It measures the degree to which the job requires the use of the eyes to observe or discover certain conditions. This factor measures quantity of work and attention not ability. Visual attention is not limited to processes, but may also be to products or prints. For specific changes by level see the Visual Effort Table in Addendum E.

In rating visual effort, the term "occasional" implies that the related task occurs infrequently. That is, it does not occur in every work cycle or involves less than 10% of the incumbent's time. "Frequent" implies that the task occurs in almost every work cycle or involves over 10% of the incumbent's time. "Continuous" implies that the task is a major work activity or involves over 80% of the incumbent's time.

Physical Effort

This factor measures the degree to which the job requires unusual physical effort or exertion. In assessing this dimension the weight handled should be considered. Handled includes pulling, pushing, and lifting. In addition, this factor requires consideration of where in

the work cycle handling occurs. For specific changes by level see the Physical Effort Table in Addendum E.

In rating physical effort, the term "consistently" implies that the handling of material is the major activity in the work cycle. "Frequently" implies that handling is not the major activity but occurs in almost every work cycle. "Occasionally" implies that handling does not always occur in the work cycle but is a regular activity.

Manual Dexterity

This factor measures the ability to move the fingers, hands, arms, feet, or legs quickly and accurately. Manual dexterity is involved in the quick and accurate handling of equipment, materials, tools, or machines. It involves judging accurately through the sense of touch and hearing and involves controlling accurately the movement of the hands. For specific changes by level see the Manual Dexterity Table in Addendum E.

Supervisory Responsibility

This factor measures the extent to which the position requires supervision of others. This includes the assigning of tasks, outlining of work, checking work, and correcting the work of others. In rating this scale consider not only the job title, but also the actual duties performed. Consider both the level in the organization and the extent of supervision. For specific changes by level see the Supervisory Responsibility Table in Addendum E.

Financial Responsibility

This factor measures the extent to which individuals have responsibility for decisions and the likely loss to the company from an error in decision making. Exclude the effects of errors due to gross negligence or intentional sabotage. For specific changes by level see the Financial Responsibility Table in Addendum E.

Responsibility for Safety of Others

This factor measures the degree to which the job requires responsibility for the safety of others and to which errors may lead to injury to others. In rating this factor consider the probability of injury to others, the severity of injury to others, and how attentive the incumbent must be to the possibility of injury to others. For specific changes by level see the Responsibility for Safety of Others Table in Addendum E.

Counseling and Teaching

This factor measures the degree to which counseling or teaching is required by the job. Counseling involves the giving of advice and guidance to others whether clinical, spiritual, professional, or personal. Teaching involves showing or demonstrating to others how to perform a function. In rating counseling and teaching consider the frequency and nature of the counseling or teaching. The terms "occasional" and "frequent" have the same definition as given for Mental Effort and Visual Effort. For specific changes by level see the Counseling and Teaching Table in Addendum E.

Negotiating and Influencing

This factor measures the degree to which negotiating and influencing are required. Negotiating involves bargaining or discussing issues with others to reach an agreeable solution. Influencing involves attempts to induce an attitude change in others or sell a product or idea. In rating negotiating and influencing consider the frequency and nature of the negotiating or influencing. The terms "occasional" and "frequent" have the same definition as given for Mental Effort and Visual Effort. For specific changes by level see the Negotiating and Influencing Table in Addendum E.

Surroundings

This factor measures the surroundings or physical conditions under which the job is done. In evaluating this factor consider the presence and relative amount of exposure to dust, dirt, heat, fumes, cold, noise, vibration, and wetness. Consider the extent to which these conditions make the job disagreeable and the general stability of the environment. For specific changes by level see the Surroundings Table in Addendum E.

Hazards

This factor measures the hazards associated with the job. In evaluating hazards consider both the extent and probability of accidents and occupational disease. Relevant variables include the work position, the type of material being handled, the machines or tools used, and the location where work is performed. For specific changes by level see the Hazards Table in Addendum E.

Monotony

This factor measures how frequently the same tasks or work cycle is repeated during the working day. This factor also considers the frequency and availability of rest pauses, the specificity of work pace, presence of repetitive activities, and freedom in scheduling. For specific changes by level see the Monotony Table in Addendum E.

Summary

This chapter consists of a description of the CJET. The CJET is a 15 scale, point method job evaluation instrument. Each of the 15 scales is discussed in detail.

Chapter 6

The Rating Task

You will soon be participating in a rating task. For this task, each rater will be asked to rate 200 jobs using the CJET. However, you will not be given the job specification. You will only receive the job description. The CJET ratings will be based on the task statements contained in the job description.

For practice, we will now rate a number of sample jobs. These sample jobs can be found in Addendum F. Rate the sample jobs carefully. After you rate each sample job, there will be a group discussion of the sample ratings. The discussion will focus on the inferential process in deriving CJET ratings from the task statements in the job descriptions.

Addendum A

Comprehensive Job Evaluation Technique

(CJET)

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Factor 1. Education

This factor measures the minimum educational level required by the job. The minimum educational level is defined as that level of education which an individual must possess prior to entry into a job in order to become proficient at the job duties within a reasonable time period.

Level	
1	Less than High School. No specific knowledge or education is required or education required is less than that equivalent to high school graduation. Job may require ability to read, write, perform simple computations, and operate simple office machines.
2	High School. Requires high school graduation or the equivalent. Knowledge of general high school subject matter, including mathematics and grammar, is required. Job requires limited knowledge of fields such as stenography, elementary office machines, elementary accounting procedures, or shop mathematics. Job requires courses in specific trade.
3	2-year College. Requires education equivalent to a two-year college degree or high school plus two years of specialized courses. Involves limited familiarity with specialized areas of study. May involve knowledge of accounting, drafting, manufacturing methods and techniques, complicated drawings and specifications, advanced math, broad trade knowledge, or electronics.
4	College. Requires the equivalent of a four-year college degree. Involves comprehensive knowledge and understanding of specialized area of study. May involve knowledge of engineering, higher mathematics, statistics, advanced accounting, business administration, economics, or educational techniques.
5	Graduate School. Requires the equivalent of a Master's degree, Ph.D., M.D., or similar advanced degree. Requires advanced study and intensive knowledge of a field. Requires independent research and highly creative work.

Factor 2. Time to Proficiency

This factor measures the average time required for an individual to reach proficiency in the job duties, given that the individual is minimally qualified for the job. Take into consideration the education and previous experience required by the job. In rating this factor, consider the level of proficiency required by the job, length of work cycles, amount of specific knowledge of the company or company techniques required, and both on-the-job and orientation training.

Level	
1	None. Does not require time to reach proficiency or time is negligible, such as less than two weeks. Major job duties are performed frequently and quickly. Requires limited on-the-job training and orientation time is limited. Requires knowledge of only the most basic company policies relevant to job.
2	1-3 months. Requires from one up to three months to reach proficiency. Critical job duties are performed monthly. Requires general knowledge of company policy relevant to own specific area of work.
3	3-6 months. Requires from three to six months. Critical job duties are performed quarterly. Requires familiarity with company policies in a specific area.
4	6-12 months. Requires from six months up to a year to reach proficiency. Critical job duties occur semiannually. Requires comprehensive knowledge of company policies.
5	Over 1 year. Requires over one year to reach proficiency. Critical job duties occur very infrequently, once a year or less. Requires extensive and in-depth knowledge of company policies in many areas. Requires extensive and extended on-the-job training.

Factor 3. Previous Experience

This factor measures the minimum amount of time an individual must have spent working at a related function, given the required level of minimum education, prior to entry into the job so as to become proficient at the job duties within a reasonable time period. In evaluating this factor consider normal career paths and time to proficiency requirements for earlier jobs. For example, a supervisor's job will normally require experience at least equivalent to the time required to become proficient at the subordinate's job.

Level

1 None. Requires no previous experience.

2 3 months. Requires three months previous experience. Requires past experience in a related function where time to proficiency is limited. Requires past experience in one entry-level position.

3 6 months. Requires six months previous experience. Requires past experience in a related function requiring 3-6 months to reach proficiency or a progression through two jobs requiring 3 months previous experience.

4 1 year. Requires one year of previous experience. Requires past experience in a related function requiring six months up to a year to reach proficiency. Requires progression through positions of increasing responsibility requiring 1-3 months of experience and 3-6 months of experience.

5 More than 1 year. Requires more than one year of previous experience in a related function. Requires past experience in a related function requiring over one year to reach proficiency or requires a progression through positions of increasingly greater responsibility such that previous experience is greater than one year.

Factor 4. Mental Effort

This factor measures the degree to which the position requires unusual mental effort, mental strain, or mental stress due to workload, deadlines or the strain of interpersonal relationships. This factor should not be confused with the education or other abilities required by the job nor should it be confused with Visual Attention nor Financial Responsibility. This characteristic is defined by the pace of work and detail, distractions, and emotional stresses involved.

Level	
1	None. Requires no special mental effort.
2	Little. Requires limited mental effort. Flow of work is intermittent. Deadlines arise occasionally but workload is such that deadlines can easily be met. Incumbent need not normally deal with customers or employees who become abusive.
3	Some. Requires occasional deadlines, monthly or yearly during which the workload may be unusually heavy. Requires occasional phone or personal contact with customers or employees who may become verbally abusive where the incumbent must retain personal composure.
4	Considerable. Requires frequent concentration to a large volume of work which must be completed within a specified period of time. Involves daily or weekly deadlines with frequent periods of unusually heavy workload. Requires phone or personal contact with customers or employees who may become verbally abusive where the incumbent must retain personal composure. Position requires the frequent disciplining and firing of subordinates.
5	Extreme. Requires constant concentration to a very large volume of work which must be completed within an extremely limited period of time. Involves daily deadlines which are inflexible. Job is such that a feeling of mental pressure exists. Requires constant overtime and on-call status. Requires frequently working longer than a normal work day.

Factor 5. Visual Attention

This factor measures the degree of visual strain. It involves the duration of, intensity of, and relief from visual strain. It measures the degree to which the job requires the use of the eyes to observe or discover certain conditions. This factor measures quantity of work and attention, not ability. Visual attention may be to processes, products, or print.

Level	
1	None. Does not require unusual eye strain. Operations involve nothing beyond casual watching.
2	Little. Requires normal visual attention. Involves frequent but not continuous observation. Involves inspection work where flaw is easily detectable. Requires occasional reading.
3	Some. Requires close visual attention to a process which is highly repetitive. Visual attention is frequent but not continuous. Requires frequent reading.
4	Considerable. Requires close visual attention to operation where attention is continuous. Requires visual attention to several processes at one time. Requires continuous concentration. Involves continuous or frequent reading of extremely small print.
5	Extreme. Requires constant eye strain or close figure work. Involves very close, exacting use of eyes on jobs where expecting coordination or observation is required.

Factor 6. Physical Effort

This factor measures the degree to which the job requires unusual physical effort or exertion. In assessing this dimension the weight handled should be considered. Handled includes pulling, pushing, and lifting. In addition, this factor requires consideration of where in the work cycle handling occurs. The term consistently implies that the handling of material is the major activity in the work cycle. Frequently implies that handling is not the major activity but occurs in almost every work cycle. Occasionally implies that handling does not always occur in the work cycle but is a regular activity.

Level

1 None. Requires little or no unusual physical effort. Requires normal physical exertion. Occasional walking or standing.

2 Little. Requires light physical effort. Light physical effort is defined as working frequently with material weighing 5-25 lbs. or occasionally with material weighing 25-50 lbs. Frequent walking or standing.

3 Some. Requires moderate physical effort. Moderate physical effort is defined as working frequently with material weighing 25-50 lbs. or consistently with material weighing 5-25 lbs. Requires frequently performing activities from an unusual postural position, such as kneeling, bending, or laying down.

4 Considerable. Requires considerable physical effort. Considerable physical effort is defined as working consistently with material weighing 25-50 lbs. or frequently with material weighing over 50 lbs.

5 Extreme. Requires heavy physical effort. Works consistently with material weighing over 50 lbs. Requires constant physical strain.

Factor 7. Manual Dexterity

This factor measures the ability to move the fingers, hands, arms, feet or legs quickly and accurately. Manual dexterity is involved in the quick and accurate handling of equipment, materials, tools, or machines. It involves judging accurately through the sense of touch and hearing and involves controlling accurately the movements of the hands.

Level	
1	None. Requires no manual dexterity. Little or no coordinated motor activity.
2	Little. Requires the ability to perform the simplest repetitive manual action at a slow or easy pace.
3	Some. Requires the ability to perform repetitive manual routines in which some skill is required to maintain satisfactory output. Requires moderate degree of repetitive manual operation. Typical machines involved include adding machines and typewriters.
4	Considerable. Requires ability to coordinate a variety of manual operations at a moderate pace or a few operations at a rapid pace. Involves repetitiveness and high speed requirements.
5	Extreme. Requires a high degree of coordination of manual operations at a rapid pace and may involve a high degree of sensory discrimination.

Factor 8. Supervisory Responsibility

This factor measures the extent to which the position requires supervision of others. This includes the assigning of tasks, outlining of work, checking work, and correcting the work of others. In rating this scale consider not only the job title, but also the actual duties performed. Consider both the level in the organization and the extent of supervision.

Level

1 None. Requires no supervisory behaviors, but may occasionally show another employee how to perform a task or give instruction on performing a task.

2 Lead Person. Requires performance of supervisory behaviors equivalent to a lead person. Gives part-time supervision to a small group of employees. Spends majority of time performing same job behaviors as members of the group. Has little or no responsibility for costs, methods, or personnel.

3 Close Supervision. Requires close and immediate supervision over a group of employees. Involves assigning duties, giving instruction, checking and verifying work, handling subordinate complaints, and interpreting company policy to workers.

4 General Supervision. Requires supervision without maintaining a close check over the specific details of subordinate's work. Unusual problems or questions of policy are brought to incumbent for advice. Is responsible for ensuring that subordinates maintain satisfactory performance. Subordinates may supervise others. May involve supervision of a department.

5 Direction. Requires direction and coordination of two or more departments or a major function or division. Establishes standards of performance and develops company policy. Assigns goals rather than establishing specific methods for performing jobs.

Factor 9. Financial Responsibility

This factor measures the extent to which individuals have responsibility for decisions and the likely loss to the company from an error in decision-making. Exclude the effects of errors due to gross negligence or intentional sabotage.

Level

1 None. The work is routine and errors are almost always discovered. Errors may result in minor clerical expense. Errors are usually discovered by the incumbent.

2 Little. The work is routine but errors may not be initially detected. However, they will usually be discovered in succeeding operations where preceding work is checked. Errors may result in limited financial loss.

3 Some. The work follows pre-established routines, however, it may involve some limited latitude for decision-making. Errors are usually not detected until financial loss has been incurred.

4 Considerable. Errors are difficult to verify or discover. Incumbents may make recommendations to management on decisions or judgments. Errors may cause excessive costs, low production, reduce profits, or have a negative impact on the relationship with a customer account. Errors are likely to result in a substantial financial loss.

5 Substantial. The work requires decisions or judgments where errors are likely to lead to major financial loss due to equipment, material or product failure, or the loss of a major customer account. Responsibility may include preparing reports or data for top management decisions or the decision-making involving future company operations. Level 5 involves decisions which have a widespread impact on operations. Level 4 decisions involve decisions on a specific product or method.

Factor 10. Responsibility for Safety of Others

This factor measures the degree to which the job requires responsibility for the safety of others and to which errors may lead to injury to others. In rating this factor consider the probability of injury to others, the severity of injury to others, and how attentive the incumbent must be to the possibility of injury to others.

Level	
1	None. Requires almost no responsibility for the safety of others. Errors will not normally result in injury to others.
2	Little. Requires only reasonable care to protect safety of others. Injuries if they do occur will be minor, cuts, bruises, or burns.
3	Some. Requires attention to ensure that actions do not create dangerous situations for others. Attention to possibility of injury by others will substantially reduce probability of injury. Injuries if they do occur will usually involve temporary disabilities.
4	Considerable. Requires constant attention to ensure that actions do not create dangerous situations for others. Others can do little to prevent accidents from occurring. However, injuries if they do occur, will usually involve temporary disabilities.
5	Substantial. Requires constant attention to ensure that actions do not create dangerous situations for others. Others can do nothing to prevent injury. Responsibility for safety of others depends entirely on correct actions and absence of others. Errors will result in death or permanent disability.

Factor 11. Counseling and Teaching

This factor measures the degree to which counseling or teaching is required by the job. Counseling involves the giving of advice, or guidance to others whether clinical, spiritual, professional, or personal. Teaching involves showing or demonstrating to others how to perform a function. In rating counseling and teaching consider the frequency and nature of the counseling or teaching.

Level	
1	None. Job does not require teaching or counseling.
2	Little. Requires occasional counseling or teaching of others. Requires counseling or teaching primarily one's own work group. Involves simple or routine matters. Requires counseling or teaching in structured situations.
3	Some. Requires frequent counseling or teaching of others either within or outside the organization. Involves simple or routine matters. Requires counseling or teaching in highly structured situations.
4	Considerable. Requires frequent counseling and teaching of others either within or outside the organization. Involves complicated or serious matters. Requires counseling or teaching in highly structured situations.
5	Substantial. Requires frequent counseling and teaching of others either within or outside the organization. Involves extremely complicated or serious matters. Involves highly unstructured settings where individuals may resist counseling or teaching.

Factor 12. Negotiating and Influencing

This factor measures the degree to which negotiating and influencing are required. Negotiating involves bargaining or discussing issues with others to reach an agreeable solution. Influencing involves attempts to induce an attitude change in others or sell a product or idea. In rating negotiating and influencing consider the frequency and nature of the negotiating or influencing.

Level	
1	None. Does not require negotiating or influencing.
2	Little. Requires occasional negotiating or influencing of others. Requires negotiating or influencing primarily within one's own work group. Involves simple or routine matters. Requires negotiating or influencing in highly structured situations.
3	Some. Requires frequent negotiating or influencing of others either within or outside the organization. Involves simple or routine matters. Requires negotiating or influencing in highly stcutured situations.
4	Considerable. Requires frequent negotiating with, or influencing of, others either within or outside the organization. Involves complicated or serious matters. Requires negotiating and influencing in structured situations.
5	Substantial. Requires frequent negotiating or influencing of others either within or outside the organization. Involves extremely complicated or serious matters. Involves highly unstructured situations where individuals may be resistant to negotiating or influencing.

Factor 13. Surroundings

This factor measures the surroundings or physical conditions under which the job is done. In evaluating this factor consider the presence and relative amount of exposure to dust, dirt, heat, fumes, cold, noise, vibration, and wetness. Consider the extent to which these conditions make the job disagreeable and the general stability of the environment.

Level	
1	Excellent. Involves excellent working conditions. Absence of disagreeable conditions. Very stable environment. Comfortable levels of all environmental variables.
2	Good. Involves good working conditions. May be slightly dirty or involve occasional exposure to environmental factors. If present, level of environmental factors is not normally identified as disagreeable.
3	Somewhat Disagreeable. Involves somewhat disagreeable working conditions due to exposure to one or more of the environmental variables. However, exposure is not consistent. Environment is fairly stable, but with uncomfortable levels of environmental variables.
4	Disagreeable. Disagreeable working conditions where several of the above elements are continuously present.
5	Severe. Involves continuous and intensive exposure to severely disagreeable elements. Very unstable environment.

Factor 14. Hazards

This factor measures the hazards associated with the job. In evaluating hazards consider both the extent and probability of accidents and occupational disease. Relevant variables include the work position, the type of material being handled, the machines or tools used, and the location where work is performed.

Level

1 None. Involves very limited probability of any injury. Probability of accident or health hazard is negligible. Does not require extensive travel.

2 Minor. Involves very limited probability of any serious injury, but possibility of minor injuries such as abrasions, bruises, and cuts does exist. Injuries are usually remedied by normal first aid procedures. Health hazards are negligible. Position requires extensive travel away from home.

3 Severe. Involves exposure to injuries which may result in loss of time due to severe injuries to hands or feet, loss of fingers or toes, eye injuries, burns, back injuries, and other similar injuries. Injuries may prevent worker from performing for a day or more. Job requires working and living for long periods in foreign countries.

4 Severe and Partially Incapacitating. Involves exposure to injuries which should they occur may result in partial incapacitation involving loss of arm or leg, loss of eyesight, or similar injuries. Requires exposure to incapacitating accidents or occupational diseases. Injuries result in amputations and permanent impairment of body function or loss of body member. Frequent minor injuries likely.

5 Permanent Disability. Involves exposure to injuries which will result in permanent disability or death. Requires exposure to severe accident or health hazards. Accidents happen frequently in spite of precautions. Injuries totally disable and prevent future employment.

Factor 15. Monotony

This factor measures how frequently the same tasks or work cycle is repeated during the working day. This factor considers the frequency and availability of rest pauses, the specificity of the work pace, presence of repetitive activities, and freedom in scheduling.

Level

1 None. Variety of tasks is such as to be considered interesting. Routine tasks are not an essential part of job. There is ample time and opportunity for rest breaks or stoppage of work for whatever causes.

2 Little. Task variety is not such that it might be considered interesting. There is limited task variety although there is ample time to alter work routine. There is ample time and opportunity for rest breaks or stoppage of work for whatever reason.

3 Some. Task variety is not such that it might be considered interesting. There is some task variety but there is no opportunity to alter work routine. Rest breaks are limited and inflexible, but there is some time for stoppage for discussions or to seek advice.

4 Considerable. Monotony of task is recognized as a factor. Must be at work place for considerable periods of time with little or no opportunity to vary tasks performed. Routine recognized as difficult part of job.

5 Extreme. Monotony is definitely a factor. Performs extremely repetitive and confining tasks. Must stay at work constantly with little opportunity for rest. Constant repetition of task with short cycle leads to extremely monotonous and confining job. Job requires continuous concentration on the work and the necessity of completion.

Addendum B

Job Description for the Position

of Billing Clerk A

Incumbent

Source of Information

Immediate Supervisor

Second Level Supervisor

Summary of Major Job Duties

This position corresponds to DOT Code 214.382-014, revised. Compiles data and operates typewriter to prepare bills of lading using adding or calculating machine.

Major Work Behaviors

Types bills of lading and lists weight and serial number of items sold. Types shipping labels.

Skill

Education

A minimum of a tenth grade education with a typing course is required.

Experience

One to three months of on-the-job experience is required to become proficient in the job duties.

Training

No special training is required.

Ability

No special ability is required.

Effort

Mental Effort

No special mental effort is required.

Physical Effort

No special physical effort is required.

Responsibility

Financial

A failure to perform in a satisfactory manner would not result in a significant financial loss, however, a customer could be billed incorrectly. The work is routine and does not require independent decision making.

Supervisory

None.

Extra Duties or Tasks

None.

Working Conditions

Surroundings

Office environment.

Hazards

None.

Physical Location

The position is located at the main plant.

Addendum C

Job Description for the Position of

Traffic Supervisor

Incumbent

Source of Information

Immediate Supervisor

Second Level Supervisor

Summary of Major Job Duties

This position corresponds to DOT Code 184.167-094. Directs and coordinates traffic activities of an organization.

Major Work Behaviors

Develops methods and procedures for transportation of raw materials to processing and production areas and commodities from departments to customers, warehouses, or other storage facilities. Determines most efficient and economic routing and mode of transportation, using rate and tariff manuals and motor freight and railroad guidebooks. Directs scheduling of shipments and notifies concerned departments or customers of arrival dates. Initiates investigations into cause of damages or shortages in consignments or overcharges for freight or insurance. Conducts studies in areas of packing, warehousing, and loading of commodities and evaluates existing procedures and standards.

Initiates changes designed to improve control and efficiency of traffic department. Negotiates contracts for leasing of transportation equipment or property. Assists in preparing department budget.

Skill

Education

A high school degree and one year of previous experience as an Assistant Traffic Manager is required.

Experience

One month of on-the-job experience is required to become proficient as a Traffic Supervisor, since proficiency in many of the duties is developed as an Assistant Traffic Manager.

Training

No special training is required to perform the job duties.

Ability

No special ability is required to perform the job duties.

Effort

Mental Effort

There is constant pressure to meet shipping and to insure that goods are shipped properly. There are constant phone calls from the shippers, sales force, and others who want immediate answers to questions concerning the proper routing of the cargo and whether or not shipments have been sent and when they might arrive. Occasional overtime is required.

Physical Effort

No special physical effort is required.

Responsibility

Financial

This position requires a decision as to the most economical mode of transportation for a shipment given the constraint that the shipment must arrive by a set date. Failure to select the proper or least expensive carrier will result over time in serious financial loss to the organization. The customer may determine that a less expensive carrier could have been used and charge the company for the difference in rate costs. This could run into thousands of dollars.

Supervisory

Position requires supervision of one or more people.

Extra Duties or Tasks

May require travel to the customer's locations, such as Saudi Arabia, to ascertain customer needs and arrange for reliable carriers.

Working Conditions

Surroundings

The job duties are performed in an office environment, with some travel to customer locations.

Hazards

None.

Physical Location

The position is located in the main plant.

Addendum D

Scale of General Educational Development

Level	Development
1	Reasoning: Apply commonsense understanding to carry out simple one- or two-step instructions. Deal with standardized situations with occasional or no variables in or from these situations encountered on the job. Mathematical: Add and subtract two digit numbers. Multiply and divide 10s and 100s by 2, 3, 4, 5. Perform the four basic arithmetic operations with coins as part of a dollar. Perform operations with units such as cup, pint, and quart; inch, foot, and yard; and ounce and pound. Reading: Recognize meaning of 2,500 (two- or three-syllable) words. Read at rate of 95-120 words per minute. Compare similarities and differences between words and between series of numbers. Writing: Print simple sentences containing subject, verb, and object, and series of numbers, names and addresses.

Speaking:

Speak simple sentences, using normal word order, and present and past tenses.

2 Reasoning:

Apply commonsense understanding to carry out detailed but uninvolved written or oral instructions. Deal with problems involving a few concrete variables in or from standardized situations.

Mathematical:

Add, subtract, multiply, and divide all units of measure. Perform the four operations with like common and decimal fractions. Compute ratio, rate, and percent. Draw and interpret bar graphs. Perform arithmetic operations involving all American monetary units.

Reading:

Passive vocabulary of 5,000-6,000 words. Read at rate of 190-215 words per minute. Read adventure stories and comic books, looking up unfamiliar words in dictionary for meaning, spelling, and pronunciation. Read instructions for assembling model cars and airplanes.

Writing:

Write compound and complex sentences, using cursive style, proper end punctuation, and employing adjectives and adverbs.

Speaking:

Speak clearly and distinctly with appropriate pauses and emphasis, correct punctuation, variations in word order, using present, perfect, and future tenses.

3 Reasoning:

Apply commonsense understanding to carry out instructions furnished in written, oral, or diagrammatic form. Deal with problems involving several concrete variables in or from standardized situations.

Mathematical:

Compute discount, interest, profit, and loss; commission, markup, and selling price; ratio and proportion, and percentage. Calculate surfaces, volumes, weights, and measures.

Algebra:

Calculate variables and formulas; monomials and polynomials; ratio and proportion variables; and square roots and radicals.

Geometry:

Calculate plane and solid figures; circumference, area, and volume. Understand kinds of angles, and properties of pairs of angles.

Reading:

Read a variety of novels, magazines, atlases, and encyclopedias. Read safety rules, instructions in the use and maintenance of shop tools and equipment, and methods and procedures in mechanical drawing and layout work.

Writing:

Write reports and essays with proper format, punctuation, spelling, and grammar, using all parts of speech.

Speaking:

Speak before an audience with poise, voice control, and confidence, using correct English and well-modulated voice.

4 Reasoning:

Apply principles of rational systems to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Interpret a variety of instructions furnished in written, oral, diagrammatic, or schedule form.

Algebra:

Deal with system of real numbers; linear, quadratic, rational, exponential, logarithmic, angle and circular functions, and inverse functions; related algebraic solution of equations and inequalities; limits and continuity, and probability and statistical inference.

Geometry:

Deductive axiomatic geometry, plane and solid; and rectangular coordinates.

Shop Math:

Practical application of fractions, percentages, ratio and proportion, mensuration, logarithms, slide rule, practical algebra, geometric construction, and essentials of trigonometry.

Reading:

Read novels, poems, newspapers, periodicals, journals, manuals, dictionaries, thesauruses, and encyclopedias.

Writing:

Prepare business letters, expositions, summaries, and reports, using prescribed format and conforming to all rules of punctuation, grammar, diction, and style.

Speaking:

Participate in panel discussions, dramatizations, and debates. Speak extemporaneously on a variety of subjects.

5 Reasoning:

Apply principles of logical or scientific thinking to define problems, collect data, establish facts, and draw valid conclusions. Interpret an extensive variety of technical instructions in mathematical or diagrammatic form. Deal with several abstract and concrete variables.

Algebra:

Work with exponents and logarithms, linear equations, quadratic equations, mathematical induction and binomial theorem, and permutations.

Calculus:

Apply concepts of analytic geometry, differentiations and integration of algebraic functions with applications.

Statistics:

Apply mathematical operations to frequency distributions, reliability and validity of tests, normal curve, analysis of variance, correlation techniques, chi-square application and sampling theory, and factor analysis.

Reading:

Read literature, book and play reviews, scientific and technical journals, abstracts, financial reports, and legal documents.

Writing:

Write novels, plays, editorials, journals, speeches, manuals, critiques, poetry, and songs.

Speaking:

Conversant in the theory, principles, and methods of effective and persuasive speaking, voice and diction, phonetics, and discussion and debate.

6 Reasoning:

Apply principles of logical or scientific thinking to a wide range of intellectual and practical problems. Deal with nonverbal symbolism (formulas, scientific equations, graphs, musical notes, etc.) in its most difficult phases. Deal with a variety of abstract and concrete variables. Apprehend the most abstruse classes of concepts.

Advanced Calculus:

Work with limits, continuity, real number systems, mean value theorems, and implicit function theorems.

Modern Algebra:

Apply fundamental concepts of theories of groups, rings, and fields. Work with differential

equations, linear algebra, infinite series, advanced operations methods, and functions of real and complex variables.

Statistics:

Work with mathematical statistics, mathematical probability and applications, experimental design, statistical inference, and econometrics.

Addendum E

Factor 1. Education

Level	Degree	Knowledge	Fields
1	Less than High School	None. Read, write, simple computations.	General
2	High School	General high school, mathematics and grammar. Specific trade.	Stenography Office machines Elementary accounting Shop mathematics
3	2-Year College	Limited familiarity with specialized area of study.	Accounting Drafting Electronics
4	College	Comprehensive knowledge of specialized area.	Engineering Statistics Economics Education
5	Graduate School	Advanced study and intensive knowledge.	Law Medicine Psychology

Factor 2. Time to Proficiency

Level	Time	Frequency of Critical Duties	On-the-job Training	Knowledge of Company Policies
1	None	Frequent	Limited	Only most basic.
2	1-3 Months	Monthly	Limited	General of specific area.
3	3-6 Months	Quarterly	Extended	Familiarity with specific area.
4	6-12 Months	Semi-Annually	Extended	Comprehensive.
5	+1 Year	Annually	Extended and extensive.	Extensive and in-depth.

Factor 3. Previous Experience

Level	Time	Time to Proficiency for Previous Job
1	None	None
2	3 Months	1-3 Months
3	6 Months	3-6 Months or 2, 3-Month Positions
4	1 Year	1-3 Months and 3-6 Months
5	+1 Year	1 Year or 1 Year Cumulative

Factor 4. Mental Effort

Level	Quantity	Deadlines	Flow of Work	Contact with Others
1	None	None	Light	None
2	Little	Occasional	Light	None
3	Some	Occasional. Monthly or Yearly.	Occasionally Heavy.	Occasional
4	Considerable	Frequent. Daily or Weekly.	Large Volume	Frequent. Disciplining Subordinates.
5	Extreme	Constant. Frequent. Overtime. On-call Status.	Large Volume. Heavy.	Frequent. Disciplining Subordinates.

Factor 5. Visual Attention

Level	Quantity	Visual Attention	Inspection Work	Pace	Reading
1	None	None	None	None	None
2	Little	Frequent	Easily Detectable. Large Flaws.	Slow	Occasional
3	Some	Close Attention to Repetitive Process. Frequent.	Flaws Not Immediately Detectable.	Moderate Pace	Frequent or Continuous
4	Considerable	Continuous. Several Processes.	Flaws Not Immediately Detectable.	Moderate to Fast Pace	Extremely Small Print
5	Extreme	Constant Eye Strain. Continuous. Several Processes.	Flaws Difficult to Detect. May Require Magnifier.	Fast Pace	Close Figure Work

Factor 6. Physical Effort

Level	Quantity	Standing and Walking	5-25 lbs.	25-50 lbs.	+50 lbs.
1	None	Occasional	None	None	None
2	Little	Continuous All Day	Frequently	Occasional	None
3	Some	Abnormal Position	Consistently	Frequently	None
4	Considerable			Consistently	Frequently
5	Extreme				Consistently

Factor 7. Manual Dexterity

Level	Quantity	Coordinated Motor Activity	Pace	Typical Machines
1	None	None	None	None
2	Little	Simplest Repetitive Action	Slow	Adding Machine Calculator
3	Some	Skilled Repetitive Action	Moderate	Adding Machine Typewriter Keypunch
4	Considerable	Variety of Operations	Moderate to Fast	Dictaphone Stenographer Comptometer
5	Extreme	Coordinate Variety of Operations with High Degree of Sensory Discrimination	Fast	Bookkeeping Switchboard

Factor 8. Supervisory Responsibility

Level	Type	Nature of Supervision	Level
1	None	None	None
2	Lead Person	Part-time Supervision. Little or no Responsibility.	None
3	Close	Assigns Duties, Gives Instructions, Checks and Verifies Work.	First
4	General	Does Not Maintain a Close Check. Handles Unusual Problems.	Second. Department.
5	Direction	Direct Department. Establishes Standards and Assigns Goals. Develops Policy.	Third. Two or More Departments.

Factor 9. Financial Responsibility

Level	Quantity	Decision-Making	Error Detection	Financial Loss
1	None	Routine	Easily Discovered by Incumbent	Minor Clerical Expense
2	Little	Routine	Easily Discovered by Incumbent	Limited
3	Some	Pre-established Routine	Not Easily Detected	Limited
4	Considerable	Recommendations	Not Easily Detected	Substantial. Product of Method.
5	Substantial	Independent	Not Easily Detected	Major Operations

Factor 10. Responsibility for Safety of Others

Level	Quantity	Degree of Attention	Prevention by Others	Effect
1	None	None	Eliminates Probability	None
2	Little	Reasonable Care	Reduced Probability	Minor
3	Some	Some Conscious Attention	Reduced Probability	Temporary Disability
4	Considerable	Constant Attention	Can Do Little	Temporary Disability
5	Substantial	Constant Attention Complete Responsibility	Can Do Nothing	Death or Permanent Disability

Factor 11. Counseling and Teaching

Level	Degree	Frequency	Role	Issues	Situation
1	None	None	None	None	None
2	Little	Occasional	Own Department	Routine	Structured
3	Some	Frequent	Outside Department	Routine	Structured
4	Considerable	Frequent	Outside Department	Serious or Complicated	Structured
5	Substantial	Frequent	Outside Department	Serious or Complicated	Unstructured Other Resistant

Factor 12. Negotiating and Influencing

Level	Degree	Frequency	Role	Issues	Situation
1	None	None	None	None	None
2	Little	Occasional	Own Department	Routine	Structured
3	Some	Frequent	Outside Department	Routine	Structured
4	Considerable	Frequent	Outside Department	Serious or Complicated	Structured
5	Substantial	Frequent	Outside Department	Serious or Complicated	Unstructured Other Resistant

Factor 13. Surroundings

Level	Degree	Environment	Environmental Variables
1	Excellent	Stable	Comfortable
2	Good	Stable	Slightly Dirty or Occasional Exposure
3	Somewhat Disagreeable	Stable	Frequent, But Not Consistent
4	Disagreeable	Stable	Several Disagreeable Elements Present, Not Intensive
5	Severe	Highly Unstable. Frequent Severe Shifts.	Continuous and Intensive Exposure to Elements

Factor 14. Hazards

Level	Degree	Probability of Serious Injury	Type of Injury	Travel
1	None	Very Limited	None	None
2	Minor	Very Limited	Minor Cuts and Bruises	Extensive Travel
3	Severe	Limited	Loss of Time Extremities and Burns	Foreign Countries
4	Incapacities	Limited, but Frequent Minor Injuries	Loss of Extremity or Eyesight	
5	Permanent Disability	Probable	Death or Disability	

Factor 15. Monotony

Level	Quantity	Alter Work Routine	Rest Breaks	Task Variety
1	None	Yes	Yes	No Routine Tasks
2	Little	Yes	Yes	Limited
3	Some	None	Limited	Limited
4	Considerable	None	Limited and Inflexible.	Very Routine Tasks
5	Extreme	None	Limited and Inflexible. Task Is Continuing.	Extremely Routine and Repetitive

Addendum F

Job Description for the Position of

Supervisor Accounts Payable

Supervises and coordinates activity of workers engaged in routing calculation, posting, and typing duties to keep accounting and statistical records.

Supervises clerk-typists who type checks, file vouchers, copies of checks, and other duties.

Responsible for payment of all bills. Receives invoices from vendors, obtains departmental approval, has check requests typed. Sends invoices to data processing, verifies printout. Obtains approval for checks. Files copies after payment of invoice.

Prepares information for general accounting department. Verifies the monthly tabulations, prepares journal entries for posting to books of original entry. Reconciles amounts received to vendor billings.

Assists general accounting department in preparation of financial reports related to accounts payable. Assists in preparation of quarterly financial forecast and monthly statements.

Talks to vendors whose accounts are past due for payment.

Handles mail. Supervises clerk-typists.

Moves displays. Helps unload trucks.

Job Description for the Position of

Central Billing Coordinator

Supervises and coordinates the billing function. Prepares billing.

Supervises the billing of all products to national accounts. Compiles data concerning correction of errors. Tests billings, selects and verifies bills.

Compiles data for clearing of deductions from cash remittances. Receives credit claims and sale deductions. Obtains supporting documents to either support or not support claims. Brings material to Assistant Controller who determines whether or not to issue credit.

Compiles closing information for accounting department. Balances data processing tabulation to individual accounts. Receives tabulations which are reconciled to individual accounts, submits to general accounting department. Supervises billing clerks who type bills according to preset instructions and format.

Job Description for the Position

of Bookkeeper

Keeps records of financial transactions of an establishment.

Verifies and enters details of transactions. Summarizes details on separate ledger using adding or calculating machine. Transfers data from separate ledger to general ledger. Keeps general ledger.

Reconciles bank accounts. Reconciles various accounts with ledger.

Posts and balances books. Handles general ledger. Transfers numbers to various books. Types material as required.

Job Description for the Position

of Accounting Clerk

Performs any combination of routine calculating posting, and verifying duties to obtain primary financial data for use in maintaining accounting records.

Posts details of business transactions, such as allotments, disbursements, deductions from payrolls, pay and expense vouchers, remittances paid and due, checks, and claims. Totals accounts, using adding machine, computes and records interest charges, refunds, cost of lost or damaged goods, freight or express charges, rentals and similar items.

Types vouchers, invoices, account statements, payrolls, periodic reports, and other records. Reconciles bank statements.

Job Description for the Position

of Sales Correspondent

Gives information to dealers and distributors regarding parts through the use of telephone or correspondence.

Opens and sorts mail for the department. Answers phone and takes orders in absence of supervisor or assistants. Refers customer orders to distributors and dealers. Writes and types letters for department personnel and performs other clerical duties as required.

Job Description for the Position

of Accountant

Applies principles of cost accounting and statistics to devise, implement, and administer systems to provide management with detailed cost data not ordinarily supplied by general accounting.

Establishes standard cost and selling price on all items sold. Maintains current price list. Updates current part and price list.

Takes physical inventory. Clarifies against standard costs.

Feeds cost and price information to computer.

Job Description for the Position
of Personnel Coordinator

Plans and carries out policies relating to all phases of personnel activities.

Interviews and investigates job applicants, including contacting references. Schedules applicants for physicals and x-rays. Contacts employees regarding job bid applications, departmental transfer requests, and applications for apprenticeships. Processes applications for supplemental unemployment benefits, processes state unemployment benefits. Explains eligibility to employee and how to fill out form. Answers questions on contract seniority and rights of employees. Explains employee discounts on appliances. Files material as required. Contacts by telephone families of employees who have problems and answers questions about employment, handles emergency requests, etc.

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